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      Agee, Michele
      Rastelli, Luca
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      Alsobrook II, John P
      Lepley, Denise M
      Gerlach, Valerie
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<210> 6
<211> 771
<212> PRT
<213> Homo sapiens

<400> 6

```
Met Ala Pro Gly Pro Phe Ser Ser Ala Leu Leu Ser Pro Pro Pro Ala
 1               5                  10                  15

Ala Leu Pro Phe Leu Leu Leu Leu Trp Ala Gly Ala Ser Arg Gly Gln
            20                  25                  30

Pro Cys Pro Gly Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr
        35                  40                  45

Met Leu Cys Ala Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp
    50                  55                  60

Arg Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val
65                  70                  75                  80

Arg Arg Arg Asp Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu
                85                  90                  95
```

10

```
Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu
            100                 105                 110

Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val
            115                 120                 125

Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu
        130                 135                 140

Gly Asn Asn Gln Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe
145                 150                 155                 160

Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala
                165                 170                 175

Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr
            180                 185                 190

Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln
            195                 200                 205

Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys
            210                 215                 220

Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys
225                 230                 235                 240

Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys
                245                 250                 255

Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu
            260                 265                 270

Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser
            275                 280                 285

Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln
    290                 295                 300

Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg
305                 310                 315                 320

Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro
                325                 330                 335

Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp
            340                 345                 350
```

```
Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe
        355             360             365

Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu
        370             375             380

Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Ala Ala Pro
385             390             395             400

Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg
            405             410             415

Pro Gly Ala Asn Asp Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu
            420             425             430

Leu Thr Ser Asn Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val
        435             440             445

Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp
    450             455             460

Ser Leu Val Tyr Arg Met Ile Pro Ser Thr Ser Gln Thr Phe Leu Val
465             470             475             480

Asn Asp Leu Ala Ala Gly Arg Ala Tyr Asp Leu Cys Val Leu Ala Val
            485             490             495

Tyr Asp Asp Gly Ala Thr Ala Leu Pro Ala Thr Arg Val Val Gly Cys
            500             505             510

Val Gln Phe Thr Thr Ala Gly Asp Pro Ala Pro Cys Arg Pro Leu Arg
        515             520             525

Ala His Phe Leu Gly Gly Thr Met Ile Ile Ala Ile Gly Gly Val Ile
        530             535             540

Val Ala Ser Val Leu Val Phe Ile Val Leu Leu Met Ile Arg Tyr Lys
545             550             555             560

Val Tyr Gly Asp Gly Asp Ser Arg Arg Val Lys Gly Ser Arg Ser Leu
            565             570             575

Pro Arg Val Ser His Val Cys Ser Gln Thr Asn Gly Ala Gly Thr Gly
        580             585             590

Ala Ala Gln Ala Pro Ala Leu Pro Ala Gln Asp His Tyr Glu Ala Leu
        595             600             605
```

```
Arg Glu Val Glu Ser Gln Ala Ala Pro Ala Val Ala Val Glu Ala Lys
    610             615             620

Ala Met Glu Ala Glu Thr Ala Ser Ala Glu Pro Glu Val Val Leu Gly
625             630             635             640

Arg Ser Leu Gly Gly Ser Ala Thr Ser Leu Cys Leu Leu Pro Ser Glu
            645             650             655

Glu Thr Ser Gly Glu Glu Ser Arg Ala Ala Val Gly Pro Arg Arg Ser
            660             665             670

Arg Ser Gly Ala Leu Glu Pro Pro Thr Ser Ala Pro Pro Thr Leu Ala
        675             680             685

Leu Val Pro Gly Gly Ala Ala Ala Arg Pro Arg Pro Gln Gln Arg Tyr
    690             695             700

Ser Phe Asp Gly Asp Tyr Gly Ala Leu Phe Gln Ser His Ser Tyr Pro
705             710             715             720

Arg Arg Ala Arg Arg Thr Lys Arg His Arg Ser Thr Pro His Leu Asp
            725             730             735

Gly Ala Gly Gly Gly Ala Ala Gly Glu Asp Gly Asp Leu Gly Leu Gly
            740             745             750

Ser Ala Arg Ala Cys Leu Ala Phe Thr Ser Thr Glu Trp Met Leu Glu
        755             760             765

Ser Thr Val
    770


<210> 7
<211> 2450
<212> DNA
<213> Homo sapiens

<400> 7
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ctctgggcgg gggcatctcg tggccagccc tgccccggcc gctgcatctg ccagaacgtg 180
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gacttcgcca acatgaccag cctggtgcac ctcactctct cccggaacac catcggccag 360
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13

```
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```

<210> 8
<211> 775
<212> PRT
<213> Homo sapiens

<400> 8

```
Met Ala Pro Gly Pro Phe Ser Ser Ala Leu Leu Ser Pro Pro Pro Ala
 1               5                   10                  15


Ala Leu Pro Phe Leu Leu Leu Leu Trp Ala Gly Ala Ser Arg Gly Gln
             20                  25                  30
```

14

Pro Cys Pro Gly Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr
        35   40   45

Met Leu Cys Ala Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp
    50   55   60

Arg Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val
65   70   75   80

Arg Arg Arg Asp Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu
                85   90   95

Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu
            100   105   110

Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val
        115   120   125

Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu
    130   135   140

Gly Asn Asn Gln Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe
145   150   155   160

Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala
            165   170   175

Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr
        180   185   190

Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln
        195   200   205

Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys
    210   215   220

Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys
225   230   235   240

Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys
            245   250   255

Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu
        260   265   270

Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser
        275   280   285

15

```
Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln
    290             295             300

Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg
305             310             315                     320

Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro
                325             330             335

Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp
            340             345             350

Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe
            355             360             365

Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu
    370             375             380

Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro
385             390             395                     400

Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg
            405             410             415

Pro Gly Ala Asn Asp Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu
            420             425             430

Leu Thr Ser Asn Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val
            435             440             445

Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp
    450             455             460

Ser Leu Val Tyr Arg Trp Val Tyr Arg Met Ile Pro Ser Thr Ser Gln
465             470             475                     480

Thr Phe Leu Val Asn Asp Leu Ala Ala Gly Arg Ala Tyr Asp Leu Cys
            485             490             495

Val Leu Ala Val Tyr Asp Asp Gly Ala Thr Ala Leu Pro Ala Thr Arg
            500             505             510

Val Val Gly Cys Val Gln Phe Thr Thr Ala Gly Asp Pro Ala Pro Cys
            515             520             525

Arg Pro Leu Arg Ala His Phe Leu Gly Gly Thr Met Ile Ile Ala Ile
    530             535             540
```

16

```
Gly Gly Val Ile Val Ala Ser Val Leu Val Phe Ile Val Leu Leu Met
545             550             555             560

Ile Arg Tyr Lys Val Tyr Gly Asp Gly Asp Ser Arg Arg Val Lys Gly
                565             570             575

Ser Arg Ser Leu Pro Arg Val Ser His Val Cys Ser Gln Thr Asn Gly
            580             585             590

Ala Gly Thr Gly Ala Ala Gln Ala Pro Ala Leu Pro Ala Gln Asp His
            595             600             605

Tyr Glu Ala Leu Arg Glu Val Glu Ser Gln Ala Ala Pro Ala Val Ala
    610             615             620

Val Glu Ala Lys Ala Met Glu Ala Glu Thr Ala Ser Ala Glu Pro Glu
625             630             635             640

Val Val Leu Gly Arg Ser Leu Gly Gly Ser Ala Thr Ser Leu Cys Leu
            645             650             655

Leu Pro Ser Glu Glu Thr Ser Gly Glu Glu Ser Arg Ala Ala Val Gly
            660             665             670

Pro Arg Arg Ser Arg Ser Gly Ala Leu Glu Pro Pro Thr Ser Ala Pro
            675             680             685

Pro Thr Leu Ala Leu Val Pro Gly Gly Ala Ala Ala Arg Pro Arg Pro
    690             695             700

Gln Gln Arg Tyr Ser Phe Asp Gly Asp Tyr Gly Ala Leu Phe Gln Ser
705             710             715             720

His Ser Tyr Pro Arg Arg Ala Arg Arg Thr Lys Arg His Arg Ser Thr
                725             730             735

Pro His Leu Asp Gly Ala Gly Gly Gly Ala Ala Gly Glu Asp Gly Asp
            740             745             750

Leu Gly Leu Gly Ser Ala Arg Ala Cys Leu Ala Phe Thr Ser Thr Glu
            755             760             765

Trp Met Leu Glu Ser Thr Val
    770             775


<210> 9
<211> 3568


                              17
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<212> DNA
<213> Homo sapiens

<400> 9
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18

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<210> 10
<211> 799
<212> PRT
<213> Homo sapiens

<400> 10

```
Met Ala Ala Lys Ser His Ala Trp Val Thr Gly Ser Phe Pro Gly Arg
 1               5                  10                  15


Ser His Leu Pro Pro Leu Leu Pro Ser His Cys Thr Met Ala Pro Gly
            20                  25                  30


Pro Phe Ser Ser Ala Leu Leu Ser Pro Pro Pro Ala Ala Leu Pro Phe
        35                  40                  45


Leu Leu Leu Leu Trp Ala Gly Ala Ser Arg Gly Gln Pro Cys Pro Gly
    50                  55                  60


Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr Met Leu Cys Ala
65                  70                  75                  80


Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp Arg Arg Val Val
                85                  90                  95


Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val Arg Arg Arg Asp
            100                 105                 110


Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu Ser Arg Asn Thr
            115                 120                 125
```

19

```
Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu Arg Ala Leu Arg
    130             135             140

Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val Arg Gly Asp Gln
145             150             155             160

Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu Gly Asn Asn Gln
                165             170             175

Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe Leu Ser Thr Val
            180             185             190

Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala Leu Pro Trp Glu
            195             200             205

Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr Leu Asp His Asn
    210             215             220

Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln Leu His Lys Leu
225             230             235             240

Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys Leu Pro Pro Asp
            245             250             255

Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys Pro Pro Thr Pro
            260             265             270

Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys Asn Cys Glu Leu
            275             280             285

Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu Glu Thr Cys Ala
    290             295             300

Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser Ile Pro Glu Glu
305             310             315             320

Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln Ala Gly Gly Arg
            325             330             335

Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg Cys Arg Ala Val
            340             345             350

Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro Asp Gly Arg Leu
            355             360             365

Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp Gly Thr Leu Asp
    370             375             380
```

20

Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe Thr Cys Ile Ala
385   390   395   400

Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu Val Cys Val Val
                405   410   415

Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro Pro Pro Leu Thr
            420   425   430

Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg Pro Gly Ala Asn
            435   440   445

Asp Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu Leu Thr Ser Asn
            450   455   460

Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val Pro Gly Ile Arg
465   470   475   480

Met Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp Ser Leu Val Tyr
                485   490   495

Arg Met Ile Pro Ser Thr Ser Gln Thr Phe Leu Val Asn Asp Leu Ala
            500   505   510

Ala Gly Arg Ala Tyr Asp Leu Cys Val Leu Ala Val Tyr Asp Asp Gly
            515   520   525

Ala Thr Ala Leu Pro Ala Thr Arg Val Val Gly Cys Val Gln Phe Thr
            530   535   540

Thr Ala Gly Asp Pro Ala Pro Cys Arg Pro Leu Arg Ala His Phe Leu
545   550   555   560

Gly Gly Thr Met Ile Ile Ala Ile Gly Gly Val Ile Val Ala Ser Val
                565   570   575

Leu Val Phe Ile Val Leu Leu Met Ile Arg Tyr Lys Val Tyr Gly Asp
            580   585   590

Gly Asp Ser Arg Arg Val Lys Gly Ser Arg Ser Leu Pro Arg Val Ser
            595   600   605

His Val Cys Ser Gln Thr Asn Gly Ala Gly Thr Gly Ala Ala Gln Ala
            610   615   620

Pro Ala Leu Pro Ala Gln Asp His Tyr Glu Ala Leu Arg Glu Val Glu
625   630   635   640

Ser Gln Ala Ala Pro Ala Val Ala Val Glu Ala Lys Ala Met Glu Ala
            645   650   655

Glu Thr Ala Ser Ala Glu Pro Glu Val Val Leu Gly Arg Ser Leu Gly
            660   665   670

Gly Ser Ala Thr Ser Leu Cys Leu Leu Pro Ser Glu Glu Thr Ser Gly
            675   680   685

Glu Glu Ser Arg Ala Ala Val Gly Pro Arg Arg Ser Arg Ser Gly Ala
        690   695   700

Leu Glu Pro Pro Thr Ser Ala Pro Pro Thr Leu Ala Leu Val Pro Gly
705   710   715   720

Gly Ala Ala Ala Arg Pro Arg Pro Gln Gln Arg Tyr Ser Phe Asp Gly
            725   730   735

Asp Tyr Gly Ala Leu Phe Gln Ser His Ser Tyr Pro Arg Arg Ala Arg
            740   745   750

Arg Thr Lys Arg His Arg Ser Thr Pro His Leu Asp Gly Ala Gly Gly
            755   760   765

Gly Ala Ala Gly Glu Asp Gly Asp Leu Gly Leu Gly Ser Ala Arg Ala
        770   775   780

Cys Leu Ala Phe Thr Ser Thr Glu Trp Met Leu Glu Ser Thr Val
785   790   795

<210> 11
<211> 2660
<212> DNA
<213> Homo sapiens

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22

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<211> 383
<212> PRT
<213> Homo sapiens

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Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala
            20   25   30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro
        35   40   45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr
        50   55   60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg
65   70   75   80

Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser
                85   90   95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala
                100   105   110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Arg Leu Pro His Phe
        115   120   125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro
        130   135   140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys
145   150   155   160

His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala
                165   170   175

Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp
                180   185   190

Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg
                195   200   205

Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Glu Asp Asp
        210   215   220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu
225   230   235   240

Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu
                245   250   255

Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp
                260   265   270

Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser
        275   280   285

Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr
    290   295   300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Ile
305   310   315   320

Tyr Pro Tyr Glu Met Leu Val Val Thr Asn Lys Gly Arg Thr Lys Leu
                325   330   335

Pro Pro Gly Val Asp Arg Met Arg Leu Glu Arg His Leu Ser Ala Glu
            340   345   350

Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu Glu Phe Gly Lys Leu
        355   360   365

Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys Ala Ser Leu Phe
    370   375   380

<210> 13
<211> 3447
<212> DNA
<213> Homo sapiens

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<210> 14
<211> 977
<212> PRT
<213> Homo sapiens

<400> 14
Gly Ser Arg Arg Ala Gly Arg Arg Val Thr Leu Pro Leu Leu Leu Ala
1   5   10   15

Leu Lys Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly
            20   25   30

26

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Gln Ile Val Leu Leu Pro Ala Glu Ala Arg Gln Arg Ser Arg Gly Arg
        35                  40                  45

Ser Ile Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu
        50                  55                  60

Leu Glu Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile
65                  70                  75                  80

Asp Ser Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu
                85                  90                  95

Phe Ile Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr
                100                 105                 110

Arg Val Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser
        115                 120                 125

Leu Lys Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg
        130                 135                 140

Met Arg His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr
145                 150                 155                 160

Ala Leu Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg
                165                 170                 175

Glu Asn Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln
                180                 185                 190

Asp Ser Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu
        195                 200                 205

Ile Phe Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser
        210                 215                 220

Ile Gly Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe
225                 230                 235                 240

Ser Gln Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr
                245                 250                 255

Ala His Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile
                260                 265                 270

Asn Ile Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu
        275                 280                 285
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27

Asn Ser Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu
    290   295   300

Asp His Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val
305   310   315   320

Cys Gln Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys
            325   330   335

Val Ala Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu
        340   345   350

Cys Val Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe
        355   360   365

Ala Leu Asn Pro Asp Glu Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala
    370   375   380

Ser Ser Asn His Gly Cys Gln Tyr Glu Cys Val Asn Thr Asp Asp Ser
385   390   395   400

Tyr Ser Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys
            405   410   415

Thr Cys Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu
        420   425   430

His Glu Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg
        435   440   445

Gly Tyr Thr Leu Asp Pro Asn Gly Lys Pro Cys Ser Arg Val Asp His
    450   455   460

Cys Ala Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu
465   470   475   480

Asp Ser Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp
            485   490   495

Leu Lys Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly
            500   505   510

Cys Glu Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys
        515   520   525

Pro Glu Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu
    530   535   540

28

Asp Ser Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser
545   550   555   560

Ser Glu Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg
                565   570   575

Glu Asp Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp
                580   585   590

His Gly Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys
                595   600   605

Glu Cys Leu Glu Gly Phe Arg Leu Thr Glu Asp Gly Lys Arg Cys Arg
        610   615   620

Ile Ser Ser Gly Lys Asp Val Cys Lys Ser Thr His His Gly Cys Glu
625   630   635   640

His Ile Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu
                645   650   655

Gly Phe Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys Thr Glu
                660   665   670

Gly Pro Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly
        675   680   685

Glu Glu Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp
        690   695   700

Ser Leu Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr
705   710   715   720

Ser Thr Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala
                725   730   735

Lys Asp Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly Lys Gly
                740   745   750

Ser Met Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr
        755   760   765

Gln Gly Glu Gly Ala Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala
        770   775   780

Ile Val Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala
785   790   795   800

29

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Ser Lys Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly
            805             810             815

Lys Ala Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn
            820             825             830

Lys His Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser
        835             840             845

Glu Lys Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly
    850             855             860

Arg Gln Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro
865             870             875             880

Thr Glu Ser Glu Pro Val Thr Ile Asn Ile Gln Asp Leu Leu Ser Cys
            885             890             895

Ser Asn Phe Ala Val Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu
        900             905             910

Leu Arg Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser
        915             920             925

Pro Leu Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met
    930             935             940

Phe Gln Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu
945             950             955             960

Glu Glu Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr
            965             970             975

Arg


<210> 15
<211> 2756
<212> DNA
<213> Homo sapiens

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30

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<400> 16

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Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile
  1               5                  10                  15

Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile
             20                  25                  30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu
             35                  40                  45

Ser Ser Cys Glu Asn Met Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
     50                  55                  60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
 65                  70                  75                  80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
                 85                  90                  95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
                100                 105                 110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
        115                 120                 125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
    130                 135                 140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
145                 150                 155                 160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
             165                 170                 175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe
             180                 185                 190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly
        195                 200                 205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
    210                 215                 220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His
225                 230                 235                 240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile
```

32

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser
     260   265   270

Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His
     275   280   285

Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln
    290   295   300

Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala
305   310   315   320

Val Asp Tyr Cys Ala Ser Ser Asn His Gly Cys Gln His Glu Cys Val
          325   330   335

Asn Thr Asp Asp Ser Tyr Ser Cys His Cys Leu Lys Gly Phe Thr Leu
          340   345   350

Asn Pro Asp Lys Lys Thr Cys Arg Arg Ile Asn Tyr Cys Ala Leu Asn
          355   360   365

Lys Pro Gly Cys Glu His Glu Cys Val Asn Met Glu Glu Ser Tyr Tyr
          370   375   380

Cys Arg Cys His Arg Gly Tyr Thr Leu Asp Pro Asn Gly Lys Thr Cys
385   390   395   400

Ser Arg Val Asp His Cys Ala Gln Gln Asp His Gly Cys Glu Gln Leu
          405   410   415

Cys Leu Asn Thr Glu Asp Ser Phe Val Cys Gln Cys Ser Glu Gly Phe
          420   425   430

Leu Ile Asn Glu Asp Leu Lys Thr Cys Ser Arg Val Asp Tyr Cys Leu
          435   440   445

Leu Ser Asp His Gly Cys Glu Tyr Ser Cys Val Asn Met Asp Arg Ser
          450   455   460

Phe Ala Cys Gln Cys Pro Glu Gly His Val Leu Arg Ser Asp Gly Lys
465   470   475   480

Thr Cys Ala Lys Leu Asp Ser Cys Ala Leu Gly Asp His Gly Cys Glu
          485   490   495

His Ser Cys Val Ser Ser Glu Asp Ser Phe Val Cys Gln Cys Phe Glu

```
                500                      505                      510

Gly Tyr Ile Leu Arg Glu Asp Gly Lys Thr Cys Arg Arg Lys Asp Val
        515             520             525

Cys Gln Ala Ile Asp His Gly Cys Glu His Ile Cys Val Asn Ser Asp
    530             535             540

Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly Phe Arg Leu Ala Glu Asp
545             550             555                     560

Gly Lys Arg Cys Arg Arg Lys Asp Val Cys Lys Ser Thr His His Gly
            565             570                 575

Cys Glu His Ile Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys
            580             585                 590

Ser Glu Gly Phe Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys
        595             600             605

Thr Glu Gly Pro Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser
    610             615             620

Leu Gly Glu Glu Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile
625             630             635                     640

Ile Asp Ser Leu Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu
            645             650                 655

Gln Tyr Ser Thr Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn
            660             665                 670

Ser Ala Lys Asp Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly
        675             680             685

Lys Gly Ser Met Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser
    690             695             700

Phe Thr Gln Gly Glu Gly Ala Arg Pro Leu Ser Thr Arg Val Pro Arg
705             710             715                     720

Ala Ala Ile Val Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu
            725             730                 735

Trp Ala Ser Lys Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly
        740             745             750

Val Gly Lys Ala Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro

                              34
```

```
             755                    760                    765

Thr Asn Lys His Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu
    770                    775                    780

Ile Ser Glu Lys Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser
785                    790                    795                    800

Asp Gly Arg Gln Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln
               805                    810                    815

Gln Pro Thr Val Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu Leu
           820                    825                    830

Arg Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser Pro
       835                    840                    845

Leu Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe
    850                    855                    860

Gln Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu
865                    870                    875                    880

Glu Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg
               885                    890                    895
```

<210> 17
<211> 1799
<212> DNA
<213> Homo sapiens

<400> 17
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aagaagaaac tgtgatcaca gtattggttg cgttcacctg catcctttct gtttttttgt 60
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ggtttgtgct gcttctaaca tcaagatgac acaccagcgg tgctcctctt caatgaaaca 180
aaccgtaaga tgctcaatga agaaagatga cagtaccaaa gcgcggcctc agaaatatga 240
gcaacttctc catatagagg acaacgattt cgcaatgaga cctggatttg gaggttctcc 300
agtgccagta ggtatagatg tccatgttga aagcattgac agcatttcag agactaacat 360
ggactttaca atgacttttt atctcaggca ttactggaaa gacgagaggc tctcctttcc 420
tagcacagca aacaaaagca tgacatttga tcatagaaag agtatccccc gccctgaaca 480
cttgcggtat tcgttattca tcagaaggct gtatctgtta tactgccaga ggtctttctt 540
ctcaccctca tccatacttc cctcatctcc agacatccat gcacctggta catctaaaag 600
cagtttgtct gatagccttg tatgtatatc tgaaaaaaac ttgccaggac acagtaaaaa 660
cacacctctt gcaatggcct acaatgagga tgacctaatg ctatactgga aacacggaaa 720
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caagtcctta aatactgaag aacatatgtc cctttctcag ttcttcattg aagacttcag  780
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atcagcattt attggacatc tactgttttt aaatagacat ttacatttct tcatcataaa  900
ttttgaaatt actcaaatat tgatgattgg aatcaccaca gtgctgacca tgtccacaat  960
catcactgct gtgagcgcct ccatgcccca ggtgtcctac ctcaaggctg tggatgtgta 1020
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cctcaccaca gtggaagagc ggaaacaatt caagaagaca ggaaaggtac agatttctag 1140
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gattgacatg gaccagactt ccctctctct aaactcagaa gacttcatga aagaaaatc 1260
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```

<210> 18
<211> 458
<212> PRT
<213> Homo sapiens

<400> 18

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Met Val Leu Ala Phe Gln Leu Val Ser Phe Thr Tyr Ile Trp Ile Ile
 1               5                  10                  15


Leu Val Cys Ala Ala Ser Asn Ile Lys Met Thr His Gln Arg Cys Ser
              20                  25                  30


Ser Ser Met Lys Gln Thr Val Arg Cys Ser Met Lys Lys Asp Asp Ser
          35                  40                  45


Thr Lys Ala Arg Pro Gln Lys Tyr Glu Gln Leu Leu His Ile Glu Asp
      50                  55                  60


Asn Asp Phe Ala Met Arg Pro Gly Phe Gly Gly Ser Pro Val Pro Val
 65                  70                  75                  80


Gly Ile Asp Val His Val Glu Ser Ile Asp Ser Ile Ser Glu Thr Asn
                  85                  90                  95


Met Asp Phe Thr Met Thr Phe Tyr Leu Arg His Tyr Trp Lys Asp Glu
                 100                 105                 110


Arg Leu Ser Phe Pro Ser Thr Ala Asn Lys Ser Met Thr Phe Asp His
```

36

Arg Lys Ser Ile Pro Arg Pro Glu His Leu Arg Tyr Ser Leu Phe Ile
    130   135   140

Arg Arg Leu Tyr Leu Leu Tyr Cys Gln Arg Ser Phe Phe Ser Pro Ser
145   150   155   160

Ser Ile Leu Pro Ser Ser Pro Asp Ile His Ala Pro Gly Thr Ser Lys
                165   170   175

Ser Ser Leu Ser Asp Ser Leu Val Cys Ile Ser Glu Lys Asn Leu Pro
                180   185   190

Gly His Ser Lys Asn Thr Pro Leu Ala Met Ala Tyr Asn Glu Asp Asp
                195   200   205

Leu Met Leu Tyr Trp Lys His Gly Asn Lys Ser Leu Asn Thr Glu Glu
    210   215   220

His Met Ser Leu Ser Gln Phe Phe Ile Glu Asp Phe Ser Ala Ser Ser
225   230   235   240

Gly Leu Ala Phe Tyr Ser Ser Thr Gly Thr Ala Phe Tyr Met Gly Asp
                245   250   255

Ser Ser Ala Phe Ile Gly His Leu Leu Phe Leu Asn Arg His Leu His
                260   265   270

Phe Phe Ile Ile Asn Phe Glu Ile Thr Gln Ile Leu Met Ile Gly Ile
            275   280   285

Thr Thr Val Leu Thr Met Ser Thr Ile Ile Thr Ala Val Ser Ala Ser
    290   295   300

Met Pro Gln Val Ser Tyr Leu Lys Ala Val Asp Val Tyr Leu Trp Val
305   310   315   320

Ser Ser Leu Phe Val Phe Leu Ser Val Ile Glu Tyr Ala Ala Val Asn
                325   330   335

Tyr Leu Thr Thr Val Glu Glu Arg Lys Gln Phe Lys Lys Thr Gly Lys
            340   345   350

Val Gln Ile Ser Arg Met Tyr Asn Ile Asp Ala Val Gln Ala Met Ala
    355   360   365

Phe Asp Gly Cys Tyr His Asp Ser Glu Ile Asp Met Asp Gln Thr Ser

37

```
Leu Ser Leu Asn Ser Glu Asp Phe Met Arg Arg Lys Ser Ile Cys Ser
385                 390                 395                 400

Pro Ser Thr Asp Ser Ser Arg Ile Lys Arg Arg Lys Ser Leu Gly Gly
            405                 410                 415

His Val Gly Arg Ile Ile Leu Glu Asn Asn His Val Ile Asp Thr Tyr
            420                 425                 430

Ser Arg Ile Leu Phe Pro Ile Val Tyr Ile Pro Leu Cys Ile Ser Leu
        435                 440                 445

Phe Asn Leu Phe Tyr Trp Gly Val Tyr Val
    450                 455
```

<210> 19
<211> 3147
<212> DNA
<213> Homo sapiens

<400> 19

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38

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cttcacaggc ttcgtccgga ccctgtactt tgctgacacc tacctgaagg acagctcccg 1980
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tcccggggcct cgtctgtctg ggtcctttgg tcaatgttgc acagttttta ttgctcccat 3060
cccttttttgt agtgggctgg gttttaagtt ataaatgtta actgcctctg ggtgaaaaag 3120
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```

<210> 20
<211> 904
<212> PRT
<213> Homo sapiens

<400> 20
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Met Arg Arg Phe Leu Arg Pro Gly His Asp Pro Val Arg Glu Arg Leu
 1               5                  10                  15


Lys Arg Asp Leu Phe Gln Phe Asn Lys Thr Val Glu His Gly Phe Pro
            20                  25                  30


His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu His Ile Leu Ala
        35                  40                  45


Ile Gly Thr Arg Ser Gly Ala Ile Lys Leu Tyr Gly Ala Pro Gly Val
    50                  55                  60
```

39

Glu Phe Met Gly Leu His Gln Glu Asn Asn Ala Val Thr Gln Ile His
65   70   75   80

Leu Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser
                85   90   95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Ala Ser Glu Leu Gln
                100   105   110

Glu Asp Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser
        115   120   125

Ala Thr Gln Ile Thr Val Val Leu Pro His Ser Ser Cys Glu Leu Leu
        130   135   140

Tyr Leu Gly Thr Glu Ser Gly Asn Val Phe Val Val Gln Leu Pro Ala
145   150   155   160

Phe Arg Ala Leu Glu Asp Arg Thr Ile Ser Ser Asp Ala Val Leu Gln
                165   170   175

Arg Leu Pro Glu Glu Ala Arg His Arg Arg Val Phe Glu Met Val Glu
                180   185   190

Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr
                195   200   205

Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu
        210   215   220

Tyr His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg
225   230   235   240

Asp Gly Arg Leu Leu Val Ser Cys His Ser Asp Gly Ser Tyr Cys Gln
                245   250   255

Trp Pro Val Ser Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu
                260   265   270

Val Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp
        275   280   285

Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met
        290   295   300

Pro Arg Ala Ser Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp
305   310   315   320

40

Gly Gln Gln Thr Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Thr Val
            325   330   335

Arg Phe Trp Asp Ala Ser Gly Val Cys Leu Arg Leu Leu Tyr Lys Leu
            340   345   350

Ser Thr Val Arg Val Phe Leu Thr Asp Thr Asp Pro Asn Glu Asn Phe
            355   360   365

Ser Ala Gln Gly Glu Asp Glu Trp Pro Pro Leu Arg Lys Val Gly Ser
            370   375   380

Phe Asp Pro Tyr Ser Asp Asp Pro Arg Leu Gly Ile Gln Lys Ile Phe
385   390   395   400

Leu Cys Lys Tyr Ser Gly Tyr Leu Ala Val Ala Gly Thr Ala Gly Gln
            405   410   415

Val Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu Gln Ala Val Glu
            420   425   430

Gln Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys
            435   440   445

Gly His Glu Arg Leu Ala Ala Arg Ser Gly Pro Val Arg Phe Glu Pro
            450   455   460

Gly Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val
465   470   475   480

Thr Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr
               485   490   495

Ser His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe
            500   505   510

Val Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro
            515   520   525

Leu Ser Arg Val Lys Ser Leu Lys Lys Ser Leu Arg Gln Ser Phe Arg
            530   535   540

Arg Met Arg Arg Ser Arg Val Ser Ser Arg Lys Arg His Pro Ala Gly
545   550   555   560

Pro Pro Gly Glu Ala Gln Glu Gly Ser Ala Lys Ala Glu Arg Pro Gly
            565   570   575

41

```
Leu Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile Glu Ala Arg
            580                 585             590

Ser Ala Glu Asp Ser Phe Thr Gly Phe Val Arg Thr Leu Tyr Phe Ala
            595                 600             605

Asp Thr Tyr Leu Lys Asp Ser Ser Arg His Cys Pro Ser Leu Trp Ala
    610                 615             620

Gly Thr Asn Gly Gly Thr Ile Tyr Ala Phe Ser Leu Arg Val Pro Pro
625                 630             635                 640

Ala Glu Arg Arg Met Asp Glu Pro Val Arg Ala Glu Gln Ala Lys Glu
            645                 650             655

Ile Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu Val Leu Asp
            660                 665             670

Gly His Ser Val Pro Leu Pro Glu Pro Leu Glu Val Ala His Asp Leu
            675                 680             685

Ser Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu Val Val Ser
    690                 695                 700

Glu Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys Leu
705                 710             715                 720

Lys Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg Arg Val Ser
            725                 730                 735

Val Ala His Phe Gly Ser Arg Arg Ala Glu Asp Tyr Gly Glu His His
            740                 745                 750

Leu Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val Ser Leu Pro
            755                 760             765

Leu Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg Glu Asp Val
    770                 775             780

Ser Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln Gly Phe Tyr
785                 790             795                 800

Leu Ile Ser Pro Ser Glu Phe Glu Arg Phe Ser Leu Ser Thr Lys Trp
            805                 810             815

Leu Val Glu Pro Arg Cys Leu Val Asp Ser Ala Glu Thr Lys Asn His
            820                 825             830

                              42
```

Arg Pro Gly Asn Gly Ala Gly Pro Lys Lys Ala Pro Ser Arg Ala Arg
        835   840   845

Asn Ser Gly Thr Gln Ser Asp Gly Glu Glu Lys Gln Pro Gly Leu Val
        850   855   860

Met Glu Arg Ala Leu Leu Ser Asp Glu Arg Ala Ala Thr Gly Val His
865   870   875   880

Ile Glu Pro Pro Trp Gly Ala Ala Ser Ala Met Ala Glu Gln Ser Glu
                885   890   895

Trp Leu Ser Val Gln Ala Ala Arg
            900

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43

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<400> 22
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Lys Arg Asp Leu Phe Gln Phe Asn Lys Thr Val Glu His Gly Phe Pro
            20                  25                  30
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44

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His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu His Ile Leu Ala
        35                  40                  45

Ile Gly Thr Arg Ser Gly Ala Ile Lys Leu Tyr Gly Ala Pro Gly Val
        50                  55                  60

Glu Phe Met Gly Leu His Gln Glu Asn Asn Ala Val Thr Gln Ile His
65                  70                  75                  80

Leu Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser
                85                  90                  95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Ala Ser Glu Leu Gln
            100                 105                 110

Glu Asp Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser
        115                 120                 125

Ala Thr Gln Ile Thr Val Val Leu Pro His Ser Ser Cys Glu Leu Leu
    130                 135                 140

Tyr Leu Gly Thr Glu Ser Gly Asn Val Phe Val Val Gln Leu Pro Ala
145                 150                 155                 160

Phe Arg Ala Leu Glu Asp Arg Thr Ile Ser Ser Asp Ala Val Leu Gln
            165                 170                 175

Arg Leu Pro Glu Glu Ala Arg His Arg Arg Val Phe Glu Met Val Glu
            180                 185                 190

Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr
        195                 200                 205

Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu
    210                 215                 220

Tyr His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg
225                 230                 235                 240

Asp Gly Arg Leu Leu Val Ser Cys His Ser Asp Gly Ser Tyr Cys Gln
            245                 250                 255

Trp Pro Val Ser Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu
            260                 265                 270

Val Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp
        275                 280                 285
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45

Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met
    290   295   300

Pro Arg Ala Ser Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp
305   310   315   320

Gly Gln Gln Thr Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Phe Thr
                325   330   335

Val Leu Thr Glu Ala Asp Pro Ala Ala Thr Phe Asp Asp Pro Tyr Ala
                340   345   350

Leu Val Val Leu Ala Glu Glu Glu Leu Val Val Ile Asp Leu Gln Thr
                355   360   365

Ala Gly Trp Pro Pro Val Gln Leu Pro Tyr Leu Ala Ser Leu His Cys
    370   375   380

Ser Ala Ile Thr Cys Ser His His Val Ser Asn Ile Pro Leu Lys Leu
385   390   395   400

Trp Glu Arg Ile Ile Ala Ala Gly Ser Arg Gln Asn Ala His Phe Ser
                405   410   415

Thr Met Glu Trp Pro Ile Asp Gly Gly Thr Ser Leu Thr Pro Ala Pro
                420   425   430

Pro Gln Arg Asp Leu Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg
                435   440   445

Phe Trp Asp Ala Ser Gly Val Cys Leu Arg Leu Leu Tyr Lys Leu Ser
    450   455   460

Thr Val Arg Val Phe Leu Thr Asp Thr Asp Pro Asn Glu Asn Phe Ser
465   470   475   480

Ala Gln Gly Glu Asp Glu Trp Pro Pro Leu Arg Lys Val Gly Ser Phe
                485   490   495

Asp Pro Tyr Ser Asp Asp Pro Arg Leu Gly Ile Gln Lys Ile Phe Leu
                500   505   510

Cys Lys Tyr Ser Gly Tyr Leu Ala Val Ala Gly Thr Ala Gly Gln Val
                515   520   525

Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu Gln Ala Val Glu Gln
                530   535   540

46

Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys Gly
545   550   555   560

His Glu Arg Leu Ala Ala Arg Ser Gly Pro Val Arg Phe Glu Pro Gly
                565   570   575

Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val Thr
                580   585   590

Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr Ser
                595   600   605

His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe Val
        610   615   620

Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro Leu
625   630   635   640

Ser Arg Val Lys Ser Leu Lys Lys Ser Leu Arg Gln Ser Phe Arg Arg
                645   650   655

Met Arg Arg Ser Arg Val Ser Ser Arg Lys Arg His Pro Ala Gly Pro
                660   665   670

Pro Gly Glu Val Arg Pro Glu Ala Gln Glu Gly Ser Ala Lys Ala Glu
                675   680   685

Arg Pro Gly Leu Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile
        690   695   700

Glu Ala Arg Ser Ala Glu Asp Ser Phe Thr Gly Phe Val Arg Thr Leu
705   710   715   720

Tyr Phe Ala Asp Thr Tyr Leu Lys Asp Ser Ser Arg His Cys Pro Ser
                725   730   735

Leu Trp Ala Gly Thr Asn Gly Gly Thr Ile Tyr Ala Phe Ser Leu Arg
                740   745   750

Val Pro Pro Ala Glu Arg Arg Met Asp Glu Pro Val Arg Ala Glu Gln
        755   760   765

Ala Lys Glu Ile Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu
        770   775   780

Val Leu Asp Gly His Ser Val Pro Leu Pro Glu Pro Leu Glu Val Ala
785   790   795   800

47

His Asp Leu Ser Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu
                805   810   815

Val Val Ser Glu Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser
                820   825   830

Ala Lys Leu Lys Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg
                835   840   845

Arg Val Ser Val Ala His Phe Gly Ser Arg Arg Ala Glu Asp Tyr Gly
    850   855   860

Glu His His Leu Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val
865   870   875   880

Ser Leu Pro Leu Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg
                885   890   895

Glu Asp Val Ser Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln
                900   905   910

Gly Phe Tyr Leu Ile Ser Pro Ser Glu Phe Glu Arg Phe Ser Leu Ser
                915   920   925

Thr Lys Trp Leu Val Glu Pro Arg Cys Leu Val Asp Ser Ala Glu Thr
    930   935   940

Lys Asn His Arg Pro Gly Asn Gly Ala Gly Pro Lys Lys Ala Pro Ser
945   950   955   960

Arg Ala Arg Asn Ser Gly Thr Gln Ser Asp Gly Glu Glu Lys Gln Pro
                965   970   975

Gly Leu Val Met Glu Arg Ala Leu Leu Ser Asp Glu Arg Ala Ala Thr
                980   985   990

Gly Val His Ile Glu Pro Pro Trp Gly Ala Ala Ser Ala Met Ala Glu
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Gln Ser Glu Trp Leu Ser Val Gln Ala Ala Arg
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<210> 24
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<212> PRT
<213> Homo sapiens

<400> 24

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Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr
              20                  25                  30
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49

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu
        35   40   45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met
        50   55   60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu
 65   70   75   80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly
                85   90   95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met
            100   105   110

Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly
            115   120   125

Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr
    130   135   140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro
145   150   155   160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val
            165   170   175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val
            180   185   190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser
            195   200   205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro
    210   215   220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys
225   230   235   240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro
            245   250   255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala
            260   265   270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly
    275   280   285

50

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Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Thr Ala Gly Val Pro Cys
    290             295             300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu
305             310             315             320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp
            325             330             335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala
            340             345             350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln
            355             360             365

Thr Ala Thr Thr Ala Gln Gly Ser Ser Thr Ala Ala Arg Ser Ala Arg
    370             375             380

Pro Ala Arg Val Ser Ser Ala Ser Ala Gly Pro Leu Arg Arg Arg Thr
385             390             395             400

Ser Arg Ser Ser Arg Leu Pro Pro Asn Arg Met His Asn Trp Arg Arg
            405             410             415

Thr Ser Ala Gly Thr Gln Met Gly Ile Ala Met Gly Pro Gly Ala Thr
            420             425             430

Arg Trp Thr Gln Gly Pro His Ser Thr Thr Val Pro Cys Asp Ala Ala
            435             440             445

Leu Met Thr Ser Arg His Gln Ser Trp Thr Pro Gln Thr Arg Cys Ser
    450             455             460

Leu Arg Ser Val Ala Arg Gly Trp Ile Gly Trp Ile Ser Gly Val Pro
465             470             475             480

Ser Cys Ala Trp Leu Gly Ala Ile Arg Ala Thr His Pro Gly Gln Ser
            485             490             495

Ala Cys Gly Ile Gly Met Leu Pro Leu Thr Gly Tyr Glu Val Trp Leu
            500             505             510

Gly Thr Leu Phe Gln Asn Pro Gln His Gly Glu Pro Ser Leu Gln Arg
    515             520             525

Val Pro Val Ala Lys Met Val Cys Gly Pro Ser Gly Ser Gln Leu Val
    530             535             540
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Leu Leu Lys Leu Glu Arg Ser Val Thr Leu Asn Gln Arg Val Ala Leu
545   550   555   560

Ile Cys Leu Pro Pro Glu Trp Tyr Val Val Pro Pro Gly Thr Lys Cys
                565   570   575

Glu Ile Ala Gly Trp Gly Glu Thr Lys Gly Thr Gly Asn Asp Thr Val
                580   585   590

Leu Asn Val Ala Leu Leu Asn Val Ile Ser Asn Gln Glu Cys Asn Ile
            595   600   605

Lys His Arg Gly Arg Gly Asp Tyr Gly Gly Pro Leu Ala Cys Phe Thr
        610   615   620

His Asn Cys Trp Val Leu Glu Gly Ile Ile Ile Pro Asn Arg Val Cys
625   630   635   640

Ala Arg Ser Cys Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val
                645   650   655

Asp Trp Ile His Lys Val Met Arg Leu Gly
                660   665

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<212> DNA
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52

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<211> 432
<212> PRT
<213> Homo sapiens

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Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Ala Phe Pro Ser
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Leu Gly Ala Gly Gly Glu Thr Pro Glu Ala Pro Glu Ser Trp Thr
            20                  25                  30

Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Ser
        35                  40                  45

Phe Met Val Pro Gly Tyr Leu Met Val Gln Tyr Phe Arg Arg Lys Asn
    50                  55                  60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
 65                  70                  75                  80

Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro
                85                  90                  95

Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu
            100                 105                 110

Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val
        115                 120                 125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser
        130                 135                 140

Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
145                 150                 155                 160

Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln
```

53

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
        180   185   190

Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
        195   200   205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
    210   215   220

Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr
225   230   235   240

Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser
            245   250   255

Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
        260   265   270

Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp
        275   280   285

Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe
    290   295   300

Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu
305   310   315   320

Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu
            325   330   335

Phe Ala Ala His Ala Leu Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln
            340   345   350

Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr
        355   360   365

Ile Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu
    370   375   380

Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val
385   390   395   400

Val Phe Ala Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Leu Lys
            405   410   415

Gln Arg Gly Lys Lys Ala Val Pro Val Glu Ser Pro Val Gln Lys Val

54

<210> 27
<211> 1742
<212> DNA
<213> Homo sapiens

<400> 27
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caccgggtga gcgctttacg gactcgcagt tcctggtgct aatgaaccga gtgctggcac 600
tgattgtggc tggcctctcc tgtgttctct gcaagcagcc ccggcatggg gcacccatgt 660
accggtactc ctttgccagc ctgtccaatg tgcttagcag ctggtgccaa tacgaagctc 720
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aatgcaggtg ttttctcagt atcacagacc agctctgcag caggggattg gggagcccag 1560
gaggcagcct tccctttttgc cttaagtcna cccatcttcc angtaagcag tttattctga 1620
gccccggggg tagacagtcc tcagtgaggg gttttgggga gtttggggtc aagagagcat 1680
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tg   1742

<210> 28
<211> 1368
<212> DNA
<213> Homo sapiens

<400> 28
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tgctccttct cttacccctg gagatcctgg tattcctctc ccccactcta cgtctactgg 180
ttccgggacg gggagatccc atactacgct gaggttgtgg ccacaaacaa cccagacaga 240
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tgctccctga gcatcggaga tgccagaatg gaggacacgg gaagctattt cttccgcgtg 360
gagagaggaa gggatgtaaa atatagctac caacagaata agctgaactt ggaggtgaca 420
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aggctgagct gcagccttcc aggatcctgt gaagcgggac cacctctcac attctcctgg 540
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caggtgacca cggagagaac tgtccagctc aatgtctccg atgctccaca gaccatcacc 720
atcttcagga acggcatagc cctagagatc ctgcaaaaca cctcatacct tccggtcctg 780
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gacagccccg agatcaagc atctcctcct ggggatgccc ctcccttgga agaacaaaag 1260
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<210> 29
<211> 455
<212> PRT
<213> Homo sapiens

<400> 29
Met Leu Pro Leu Leu Leu Leu Pro Leu Leu Trp Gly Gly Ser Leu Gln
1   5   10   15

Glu Lys Pro Val Tyr Glu Leu Gln Val Gln Lys Ser Val Thr Val Gln
                20   25   30

Glu Gly Leu Cys Val Leu Val Pro Cys Ser Phe Ser Tyr Pro Trp Arg
            35   40   45

Ser Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly
        50   55   60

Glu Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg
65   70   75   80

56

Arg Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val
                85   90   95

Gln Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp
            100   105   110

Thr Gly Ser Tyr Phe Phe Arg Val Glu Arg Gly Arg Asp Val Lys Tyr
            115   120   125

Ser Tyr Gln Gln Asn Lys Leu Asn Leu Glu Val Thr Ala Leu Ile Glu
    130   135   140

Lys Pro Asp Ile His Phe Leu Glu Pro Leu Glu Ser Gly Arg Pro Thr
145   150   155   160

Arg Leu Ser Cys Ser Leu Pro Gly Ser Cys Glu Ala Gly Pro Pro Leu
            165   170   175

Thr Phe Ser Trp Thr Gly Asn Ala Leu Ser Pro Leu Asp Pro Glu Thr
            180   185   190

Thr Arg Ser Ser Glu Leu Thr Leu Thr Pro Arg Pro Glu Asp His Gly
            195   200   205

Thr Asn Leu Thr Cys Gln Met Lys Arg Gln Gly Ala Gln Val Thr Thr
    210   215   220

Glu Arg Thr Val Gln Leu Asn Val Ser Asp Ala Pro Gln Thr Ile Thr
225   230   235   240

Ile Phe Arg Asn Gly Ile Ala Leu Glu Ile Leu Gln Asn Thr Ser Tyr
            245   250   255

Leu Pro Val Leu Glu Gly Gln Ala Leu Arg Leu Leu Cys Asp Ala Pro
            260   265   270

Ser Asn Pro Pro Ala His Ser Trp Phe Gln Gly Ser Pro Ala Leu Asn
            275   280   285

Ala Thr Pro Ile Ser Asn Thr Gly Ile Leu Glu Leu Arg Arg Val Arg
    290   295   300

Ser Ala Glu Glu Gly Gly Phe Thr Cys Arg Ala Gln His Pro Leu Gly
305   310   315   320

Phe Leu Gln Ile Phe Leu Asn Leu Ser Val Tyr Trp Arg Ser Asn Leu
            325   330   335

Gly Thr Gly Val Val Pro Ala Ala Leu Gly Gly Ala Gly Val Met Ala
            340   345   350

Leu Leu Cys Ile Cys Leu Cys Leu Ile Phe Phe Leu Ile Val Lys Ala
            355   360   365

Arg Arg Lys Gln Ala Ala Gly Arg Pro Glu Lys Met Asp Asp Glu Asp
        370   375   380

Pro Ile Met Gly Thr Ile Thr Ser Gly Ser Arg Lys Lys Pro Trp Pro
385   390   395   400

Asp Ser Pro Gly Asp Gln Ala Ser Pro Pro Gly Asp Ala Pro Pro Leu
            405   410   415

Glu Glu Gln Lys Glu Leu His Tyr Ala Ser Leu Ser Phe Ser Glu Met
            420   425   430

Lys Ser Arg Glu Pro Lys Asp Gln Glu Ala Pro Ser Thr Thr Glu Tyr
        435   440   445

Ser Glu Ile Lys Thr Ser Lys
    450   455

<210> 30
<211> 1811
<212> DNA
<213> Homo sapiens

<400> 30
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tgagtggaac atgcagcatt ttatggctac agagttaagg caagggttga attccacgag 180
tcaaaaagca gcccttttca gagacccaac tctctggggt gctcaggggc ttgggctgga 240
ttgagaagaa aactgacaag agtaagctgc cctctcttct ctggccatct cacaaaccac 300
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gctgcccatg gtgtccgcgg cgggtctctc tggggatggc aagatgcgag gggtgctcct 420
ggtgctgctc ggccttctct attcttccac cagttgtggc gtccagaaag cttccgtttt 480
ctacggtcct gaccccaagg agggcttggt cagcagcatg gagttcccgt gggtggtgtc 540
gctgcaggac tcccagtaca cacacctggc tttcggctgc atcctgagcg agttctgggt 600
cctcagcatc gcatccgcca ttcagaacag gaaggacatt gtcgttatag tgggtataag 660
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tgaggacttt gataacaact ccatgagcaa caacatagcc ctcctgaaga cagacacagc 780
gatgcatttt ggcaacctgg tccagtccat ctgcttcctc ggcagaatgc tgcatacacc 840
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catgacgatg agtgtcctga ggaaaatctt cgtgaaagat cttgacatgt gtcccctata 960
caaactccag aagacagaat gcggcagcca cacgaaagag gaaaccaaga ctgcctgctt 1020

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atacactggg ctggctctcc ctcctctatc cctctcccag gtgtgggaag gtcactttca 1740
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aaaaaaaaaa a                                                    1811
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<210> 31
<211> 395
<212> PRT
<213> Homo sapiens

<400> 31

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Met Val Ser Ala Ala Gly Leu Ser Gly Asp Gly Lys Met Arg Gly Val
 1               5                  10                  15

Leu Leu Val Leu Leu Gly Leu Leu Tyr Ser Ser Thr Ser Cys Gly Val
            20                  25                  30

Gln Lys Ala Ser Val Phe Tyr Gly Pro Asp Pro Lys Glu Gly Leu Val
        35                  40                  45

Ser Ser Met Glu Phe Pro Trp Val Val Ser Leu Gln Asp Ser Gln Tyr
    50                  55                  60

Thr His Leu Ala Phe Gly Cys Ile Leu Ser Glu Phe Trp Val Leu Ser
65                  70                  75                  80

Ile Ala Ser Ala Ile Gln Asn Arg Lys Asp Ile Val Val Ile Val Gly
                85                  90                  95

Ile Ser Asn Met Asp Pro Ser Lys Ile Ala His Thr Glu Tyr Pro Val
            100                 105                 110

Asn Thr Ile Ile Ile His Glu Asp Phe Asp Asn Asn Ser Met Ser Asn
            115                 120                 125

Asn Ile Ala Leu Leu Lys Thr Asp Thr Ala Met His Phe Gly Asn Leu
        130                 135                 140
```

59

```
Val Gln Ser Ile Cys Phe Leu Gly Arg Met Leu His Thr Pro Pro Val
145             150             155             160

Leu Gln Asn Cys Trp Val Ser Gly Trp Asn Pro Thr Ser Ala Thr Gly
                165             170             175

Asn His Met Thr Met Ser Val Leu Arg Lys Ile Phe Val Lys Asp Leu
            180             185             190

Asp Met Cys Pro Leu Tyr Lys Leu Gln Lys Thr Glu Cys Gly Ser His
            195             200             205

Thr Lys Glu Glu Thr Lys Thr Ala Cys Leu Gly Asp Pro Gly Ser Pro
    210             215             220

Met Met Cys Gln Leu Gln Gln Phe Asp Leu Trp Val Leu Arg Gly Ile
225             230             235             240

Leu Asn Phe Gly Gly Glu Thr Cys Pro Gly Leu Phe Leu Tyr Thr Lys
            245             250             255

Val Glu Asp Tyr Ser Lys Trp Ile Thr Ser Lys Ala Glu Arg Ala Gly
            260             265             270

Pro Pro Leu Ser Ser Leu His His Trp Glu Lys Leu Ile Ser Phe Ser
            275             280             285

His His Gly Pro Asn Ala Ala Met Thr Gln Lys Thr Tyr Ser Asp Ser
    290             295             300

Glu Leu Gly His Val Gly Ser Tyr Leu Gln Gly Gln Arg Arg Thr Ile
305             310             315             320

Thr His Ser Arg Leu Gly Asn Ser Ser Arg Asp Ser Leu Asp Val Arg
            325             330             335

Glu Lys Asp Val Lys Glu Ser Gly Arg Ser Pro Glu Ala Ser Val Gln
            340             345             350

Pro Leu Tyr Tyr Asp Tyr Tyr Gly Gly Glu Val Gly Glu Gly Arg Ile
            355             360             365

Phe Ala Gly Gln Asn Arg Leu Tyr Gln Pro Glu Glu Ile Ile Leu Val
    370             375             380

Ser Phe Val Leu Val Phe Phe Cys Ser Ser Ile
385             390             395
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60

<210> 32
<211> 558
<212> PRT
<213> Mus musculus

<400> 32

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Met Ala His Ser Glu Glu Gln Ala Ala Val Pro Cys Ala Phe Ile Arg
 1               5                  10                  15

Gln Asn Ser Gly Asn Ser Ile Ser Leu Asp Phe Glu Pro Asp Thr Glu
                 20                  25                  30

Tyr Gln Phe Val Glu Gln Leu Glu Glu Arg Tyr Lys Cys Ala Phe Cys
             35                  40                  45

His Ser Val Leu His Asn Pro His Gln Thr Gly Cys Gly His Arg Phe
     50                  55                  60

Cys Gln Gln Cys Ile Arg Ser Leu Arg Glu Leu Asn Ser Val Pro Ile
 65                  70                  75                  80

Cys Pro Val Asp Lys Glu Val Ile Lys Pro Gln Glu Val Phe Lys Asp
                 85                  90                  95

Asn Cys Cys Lys Arg Glu Val Leu Asn Leu His Val Tyr Cys Lys Asn
                100                 105                 110

Ala Pro Gly Cys Asn Ala Arg Ile Ile Leu Gly Arg Phe Gln Asp His
            115                 120                 125

Leu Gln His Cys Ser Phe Gln Ala Val Pro Cys Pro Asn Glu Ser Cys
    130                 135                 140

Arg Glu Ala Met Leu Arg Lys Asp Val Lys Glu His Leu Ser Ala Tyr
145                 150                 155                 160

Cys Arg Phe Arg Glu Glu Lys Cys Leu Tyr Cys Lys Arg Asp Ile Val
                165                 170                 175

Val Thr Asn Leu Gln Asp His Glu Glu Asn Ser Cys Pro Ala Tyr Pro
            180                 185                 190

Val Ser Cys Pro Asn Arg Cys Val Gln Thr Ile Pro Arg Ala Arg Val
            195                 200                 205

Asn Glu His Leu Thr Val Cys Pro Glu Ala Glu Gln Asp Cys Pro Phe
```

61

Lys His Tyr Gly Cys Thr Val Lys Gly Lys Arg Gly Asn Leu Leu Glu
225   230   235   240

His Glu Arg Ala Ala Leu Gln Asp His Met Leu Leu Val Leu Glu Lys
                        245   250   255

Asn Tyr Gln Leu Glu Gln Arg Ile Ser Asp Leu Tyr Gln Ser Leu Glu
                        260   265   270

Gln Lys Glu Ser Lys Ile Gln Gln Leu Ala Glu Thr Val Lys Lys Phe
                        275   280   285

Glu Lys Glu Leu Lys Gln Phe Thr Gln Met Phe Gly Arg Asn Gly Thr
                        290   295   300

Phe Leu Ser Asn Val Gln Ala Leu Thr Ser His Thr Asp Lys Ser Ala
305   310   315   320

Trp Leu Glu Ala Gln Val Arg Gln Leu Leu Gln Ile Val Asn Gln Gln
                        325   330   335

Pro Ser Arg Leu Asp Leu Arg Ser Leu Val Asp Ala Val Asp Ser Val
                        340   345   350

Lys Gln Arg Ile Thr Gln Leu Glu Ala Ser Asp Gln Arg Leu Val Leu
                        355   360   365

Leu Glu Gly Glu Thr Ser Lys His Asp Ala His Ile Asn Ile His Lys
                        370   375   380

Ala Gln Leu Asn Lys Asn Glu Glu Arg Phe Lys Gln Leu Glu Gly Ala
385   390   395   400

Cys Tyr Ser Gly Lys Leu Ile Trp Lys Val Thr Asp Tyr Arg Val Lys
                        405   410   415

Lys Arg Glu Ala Val Glu Gly His Thr Val Ser Val Phe Ser Gln Pro
                        420   425   430

Phe Tyr Thr Ser Arg Cys Gly Tyr Arg Leu Cys Ala Arg Ala Tyr Leu
                        435   440   445

Asn Gly Asp Gly Ser Gly Lys Gly Thr His Leu Ser Leu Tyr Phe Val
                        450   455   460

Val Met Arg Gly Glu Phe Asp Ser Leu Leu Gln Trp Pro Phe Arg Gln

Arg Val Thr Leu Met Leu Leu Asp Gln Ser Gly Lys Lys Asn His Ile
                485   490   495

Val Glu Thr Phe Lys Ala Asp Pro Asn Ser Ser Ser Phe Lys Arg Pro
                500   505   510

Asp Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Arg Phe Val Ser His
            515   520   525

Ser Thr Leu Glu Asn Ser Lys Asn Thr Tyr Ile Lys Asp Asp Thr Leu
        530   535   540

Phe Leu Lys Val Ala Val Asp Leu Thr Asp Leu Glu Asp Leu
545   550   555

<210> 33
<211> 558
<212> PRT
<213> Mus musculus

<400> 33
Met Ala His Ser Glu Glu Gln Ala Ala Val Pro Cys Ala Phe Ile Arg
    1   5   10   15

Gln Asn Ser Gly Asn Ser Ile Ser Leu Asp Phe Glu Pro Asp Thr Glu
                20   25   30

Tyr Gln Phe Val Glu Gln Leu Glu Glu Arg Tyr Lys Cys Ala Phe Cys
            35   40   45

His Ser Val Leu His Asn Pro His Gln Thr Gly Cys Gly His Arg Phe
        50   55   60

Cys Gln Gln Cys Ile Arg Ser Leu Arg Glu Leu Asn Ser Val Pro Ile
65   70   75   80

Cys Pro Val Asp Lys Glu Val Ile Lys Pro Gln Glu Val Phe Lys Asp
                85   90   95

Asn Cys Cys Lys Arg Glu Val Leu Asn Leu His Val Tyr Cys Lys Asn
            100   105   110

Ala Pro Gly Cys Asn Ala Arg Ile Ile Leu Gly Arg Phe Gln Asp His
            115   120   125

Leu Gln His Cys Ser Phe Gln Ala Val Pro Cys Pro Asn Glu Ser Cys
    130   135   140

Arg Glu Ala Met Leu Arg Lys Asp Val Lys Glu His Leu Ser Ala Tyr
145   150   155   160

Cys Arg Phe Arg Glu Glu Lys Cys Leu Tyr Cys Lys Arg Asp Ile Val
            165   170   175

Val Thr Asn Leu Gln Asp His Glu Glu Asn Ser Cys Pro Ala Tyr Pro
            180   185   190

Val Ser Cys Pro Asn Arg Cys Val Gln Thr Ile Pro Arg Ala Arg Val
            195   200   205

Asn Glu His Leu Thr Val Cys Pro Glu Ala Glu Gln Asp Cys Pro Phe
    210   215   220

Lys His Tyr Gly Cys Thr Val Lys Gly Lys Arg Gly Asn Leu Leu Glu
225   230   235   240

His Glu Arg Ala Ala Leu Gln Asp His Met Leu Leu Val Leu Glu Lys
            245   250   255

Asn Tyr Gln Leu Glu Gln Arg Ile Ser Asp Leu Tyr Gln Ser Leu Glu
            260   265   270

Gln Lys Glu Ser Lys Ile Gln Gln Leu Ala Glu Thr Val Lys Lys Phe
            275   280   285

Glu Lys Glu Leu Lys Gln Phe Thr Gln Met Phe Gly Arg Asn Gly Thr
    290   295   300

Phe Leu Ser Asn Val Gln Ala Leu Thr Ser His Thr Asp Lys Ser Ala
305   310   315   320

Trp Leu Glu Ala Gln Val Arg His Leu Leu Gln Ile Val Asn Gln Gln
            325   330   335

Pro Ser Arg Leu Asp Leu Arg Ser Leu Val Asp Ala Val Asp Ser Val
            340   345   350

Lys Gln Arg Ile Thr Gln Leu Glu Ala Ser Asp Gln Arg Leu Val Leu
            355   360   365

Leu Glu Gly Glu Thr Ser Lys His Asp Ala His Ile Asn Ile His Lys
    370   375   380

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```
Ala Gln Leu Asn Lys Asn Glu Glu Arg Phe Lys Gln Leu Glu Gly Ala
385             390             395                 400

Cys Tyr Ser Gly Lys Leu Ile Trp Lys Val Thr Asp Tyr Arg Val Lys
                405             410                 415

Lys Arg Glu Ala Val Glu Gly His Thr Val Ser Val Phe Ser Gln Pro
            420             425             430

Phe Tyr Thr Ser Arg Cys Gly Tyr Arg Leu Cys Ala Arg Ala Tyr Leu
        435             440             445

Asn Gly Asp Gly Ser Gly Lys Gly Thr His Leu Ser Leu Tyr Phe Val
    450             455             460

Val Met Arg Gly Glu Phe Asp Ser Leu Leu Gln Trp Pro Phe Arg Gln
465             470             475             480

Arg Val Thr Leu Met Leu Leu Asp Gln Ser Gly Lys Lys Asn His Ile
            485             490             495

Val Glu Thr Phe Lys Ala Asp Pro Asn Ser Ser Ser Phe Lys Arg Pro
            500             505             510

Asp Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Arg Phe Val Ser His
        515             520             525

Ser Thr Leu Glu Asn Ser Lys Asn Thr Tyr Ile Lys Asp Asp Thr Leu
        530             535             540

Phe Leu Lys Val Ala Val Asp Leu Thr Asp Leu Glu Asp Leu
545             550             555


<210> 34
<211> 557
<212> PRT
<213> Homo sapiens

<400> 34
Met Ala Tyr Ser Glu Glu His Lys Gly Met Pro Cys Gly Phe Ile Arg
 1             5                   10                  15

Gln Asn Ser Gly Asn Ser Ile Ser Leu Asp Phe Glu Pro Ser Ile Glu
            20              25              30

Tyr Gln Phe Val Glu Arg Leu Glu Glu Arg Tyr Lys Cys Ala Phe Cys
        35              40                  45
```

His Ser Val Leu His Asn Pro His Gln Thr Gly Cys Gly His Arg Phe
    50   55   60

Cys Gln His Cys Ile Leu Ser Leu Arg Glu Leu Asn Thr Val Pro Ile
65   70   75   80

Cys Pro Val Asp Lys Glu Val Ile Lys Ser Gln Glu Val Phe Lys Asp
                85   90   95

Asn Cys Cys Lys Arg Glu Val Leu Asn Leu Tyr Val Tyr Cys Ser Asn
                100   105   110

Ala Pro Gly Cys Asn Ala Lys Val Ile Leu Gly Arg Tyr Gln Asp His
            115   120   125

Leu Gln Gln Cys Leu Phe Gln Pro Val Gln Cys Ser Asn Glu Lys Cys
    130   135   140

Arg Glu Pro Val Leu Arg Lys Asp Leu Lys Glu His Leu Ser Ala Ser
145   150   155   160

Cys Gln Phe Arg Lys Glu Lys Cys Leu Tyr Cys Lys Lys Asp Val Val
            165   170   175

Val Ile Asn Leu Gln Asn His Glu Glu Asn Leu Cys Pro Glu Tyr Pro
            180   185   190

Val Phe Cys Pro Asn Asn Cys Ala Lys Ile Ile Leu Lys Thr Glu Val
        195   200   205

Asp Glu His Leu Ala Val Cys Pro Glu Ala Glu Gln Asp Cys Pro Phe
    210   215   220

Lys His Tyr Gly Cys Ala Val Thr Asp Lys Arg Arg Asn Leu Gln Gln
225   230   235   240

His Glu His Ser Ala Leu Arg Glu His Met Arg Leu Val Leu Glu Lys
            245   250   255

Asn Val Gln Leu Glu Glu Gln Ile Ser Asp Leu His Lys Ser Leu Glu
            260   265   270

Gln Lys Glu Ser Lys Ile Gln Gln Leu Ala Glu Thr Ile Lys Lys Leu
    275   280   285

Glu Lys Glu Phe Lys Gln Phe Ala Gln Leu Phe Gly Lys Asn Gly Ser
    290   295   300

66

```
Phe Leu Pro Asn Ile Gln Val Phe Ala Ser His Ile Asp Lys Ser Ala
305             310             315             320

Trp Leu Glu Ala Gln Val His Gln Leu Leu Gln Met Val Asn Gln Gln
            325             330             335

Gln Asn Lys Phe Asp Leu Arg Pro Leu Met Glu Ala Val Asp Thr Val
            340             345             350

Lys Gln Lys Ile Thr Leu Leu Glu Asn Asn Asp Gln Arg Leu Ala Val
            355             360             365

Leu Glu Glu Glu Thr Asn Lys His Asp Thr His Ile Asn Ile His Lys
    370             375             380

Ala Gln Leu Ser Lys Asn Glu Glu Arg Phe Lys Leu Leu Glu Gly Thr
385             390             395             400

Cys Tyr Asn Gly Lys Leu Ile Trp Lys Val Thr Asp Tyr Lys Met Lys
            405             410             415

Lys Arg Glu Ala Val Asp Gly His Thr Val Ser Ile Phe Ser Gln Ser
            420             425             430

Phe Tyr Thr Ser Arg Cys Gly Tyr Arg Leu Cys Ala Arg Ala Tyr Leu
            435             440             445

Asn Gly Asp Gly Ser Gly Arg Gly Ser His Leu Ser Leu Tyr Phe Val
    450             455             460

Val Met Arg Gly Glu Phe Asp Ser Leu Leu Gln Trp Pro Phe Arg Gln
465             470             475             480

Arg Val Thr Leu Met Leu Leu Asp Gln Ser Gly Lys Lys Asn Ile Met
            485             490             495

Glu Thr Phe Lys Pro Asp Pro Asn Ser Ser Ser Phe Lys Arg Pro Asp
            500             505             510

Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Arg Phe Val Ala His Ser
            515             520             525

Val Leu Glu Asn Ala Lys Asn Ala Tyr Ile Lys Asp Asp Thr Leu Phe
    530             535             540

Leu Lys Val Ala Val Asp Leu Thr Asp Leu Glu Asp Leu
545             550             555
```

67

<210> 35
<211> 543
<212> PRT
<213> Homo sapiens

<400> 35
Met Glu Ser Ser Lys Lys Met Asp Ser Pro Gly Ala Leu Gln Thr Asn
1   5   10   15

Pro Pro Leu Lys Leu His Thr Asp Arg Ser Ala Gly Thr Pro Val Phe
            20   25   30

Val Pro Glu Gln Gly Gly Tyr Lys Glu Lys Phe Val Lys Thr Val Glu
        35   40   45

Asp Lys Tyr Lys Cys Glu Lys Cys His Leu Val Leu Cys Ser Pro Lys
    50   55   60

Gln Thr Glu Cys Gly His Arg Phe Cys Glu Ser Cys Met Ala Ala Leu
65   70   75   80

Leu Ser Ser Ser Ser Pro Lys Cys Thr Ala Cys Gln Glu Ser Ile Val
                85   90   95

Lys Asp Lys Val Phe Lys Asp Asn Cys Cys Lys Arg Glu Ile Leu Ala
            100   105   110

Leu Gln Ile Tyr Cys Arg Asn Glu Ser Arg Gly Cys Ala Glu Gln Leu
            115   120   125

Thr Leu Gly His Leu Leu Val His Leu Lys Asn Asp Cys His Phe Glu
    130   135   140

Glu Leu Pro Cys Val Arg Pro Asp Cys Lys Glu Lys Val Leu Arg Lys
145   150   155   160

Asp Leu Arg Asp His Val Glu Lys Ala Cys Lys Tyr Arg Glu Ala Thr
            165   170   175

Cys Ser His Cys Lys Ser Gln Val Pro Met Ile Ala Leu Gln Lys His
            180   185   190

Glu Asp Thr Asp Cys Pro Cys Val Val Ser Cys Pro His Lys Cys
            195   200   205

Ser Val Gln Thr Leu Leu Arg Ser Glu Gly Thr Asn Gln Gln Ile Lys

68

```
           210                      215                      220

Ala His Glu Ala Ser Ser Ala Val Gln His Val Asn Leu Leu Lys Glu
225                 230                 235                 240

Trp Ser Asn Ser Leu Glu Lys Lys Val Ser Leu Leu Gln Asn Glu Ser
                245                 250                 255

Val Glu Lys Asn Lys Ser Ile Gln Ser Leu His Asn Gln Ile Cys Ser
                260                 265                 270

Phe Glu Ile Glu Ile Glu Arg Gln Lys Glu Met Leu Arg Asn Asn Glu
            275                 280                 285

Ser Lys Ile Leu His Leu Gln Arg Val Ile Asp Ser Gln Ala Glu Lys
    290                 295                 300

Leu Lys Glu Leu Asp Lys Glu Ile Arg Ser Phe Arg Gln Asn Trp Glu
305                 310                 315                 320

Glu Ala Asp Ser Met Lys Ser Ser Val Glu Ser Leu Gln Asn Arg Val
                325                 330                 335

Thr Glu Leu Glu Ser Val Asp Lys Ser Ala Gly Gln Val Ala Arg Asn
            340                 345                 350

Thr Gly Leu Leu Glu Ser Gln Leu Ser Arg His Asp Gln Met Leu Ser
    355                 360                 365

Val His Asp Ile Arg Leu Ala Asp Met Asp Leu Arg Phe Gln Val Leu
    370                 375                 380

Glu Thr Ala Ser Tyr Asn Gly Val Leu Ile Trp Lys Ile Arg Asp Tyr
385                 390                 395                 400

Lys Arg Arg Lys Gln Glu Ala Val Met Gly Lys Thr Leu Ser Leu Tyr
                405                 410                 415

Ser Gln Pro Phe Tyr Thr Gly Tyr Phe Gly Tyr Lys Met Cys Ala Arg
            420                 425                 430

Val Tyr Leu Asn Gly Asp Gly Met Gly Lys Gly Thr His Leu Ser Leu
    435                 440                 445

Phe Phe Val Ile Met Arg Gly Glu Tyr Asp Ala Leu Leu Pro Trp Pro
    450                 455                 460

Phe Lys Gln Lys Val Thr Leu Met Leu Met Asp Gln Gly Ser Ser Arg

                               69
```

Arg His Leu Gly Asp Ala Phe Lys Pro Asp Pro Asn Ser Ser Ser Phe
                485   490   495

Lys Lys Pro Thr Gly Glu Met Asn Ile Ala Ser Gly Cys Pro Val Phe
            500   505   510

Val Ala Gln Thr Val Leu Glu Asn Gly Thr Tyr Ile Lys Asp Asp Thr
        515   520 ·   525

Ile Phe Ile Lys Val Ile Val Asp Thr Ser Asp Leu Pro Asp Pro
    530   535   540

<210> 36
<211> 568
<212> PRT
<213> Homo sapiens

<400> 36
Met Glu Ser Ser Lys Lys Met Asp Ser Pro Gly Ala Leu Gln Thr Asn
 1   5   10   15

Pro Pro Leu Lys Leu His Thr Asp Arg Ser Ala Gly Thr Pro Val Phe
            20   25   30

Val Pro Glu Gln Gly Gly Tyr Lys Glu Lys Phe Val Lys Thr Val Glu
        35   40   45

Asp Lys Tyr Lys Cys Glu Lys Cys His Leu Val Leu Cys Ser Pro Lys
    50   55   60

Gln Thr Glu Cys Gly His Arg Phe Cys Glu Ser Cys Met Ala Ala Leu
65   70   75   80

Leu Ser Ser Ser Ser Pro Lys Cys Thr Ala Cys Gln Glu Ser Ile Val
            85   90   95

Lys Asp Lys Val Phe Lys Asp Asn Cys Cys Lys Arg Glu Ile Leu Ala
            100   105   110

Leu Gln Ile Tyr Cys Arg Asn Glu Ser Arg Gly Cys Ala Glu Gln Leu
            115   120   125

Thr Leu Gly His Leu Leu Val His Leu Lys Asn Asp Cys His Phe Glu
    130   135   140

```
Glu Leu Pro Cys Val Arg Pro Asp Cys Lys Glu Lys Val Leu Arg Lys
145             150             155             160

Asp Leu Arg Asp His Val Glu Lys Ala Cys Lys Tyr Arg Glu Ala Thr
            165             170             175

Cys Ser His Cys Lys Ser Gln Val Pro Met Ile Ala Leu Gln Lys His
            180             185             190

Glu Asp Thr Asp Cys Pro Cys Val Val Val Ser Cys Pro His Lys Cys
        195             200             205

Ser Val Gln Thr Leu Leu Arg Ser Glu Leu Ser Ala His Leu Ser Glu
        210             215             220

Cys Val Asn Ala Pro Ser Thr Cys Ser Phe Lys Arg Tyr Gly Cys Val
225             230             235             240

Phe Gln Gly Thr Asn Gln Gln Ile Lys Ala His Glu Ala Ser Ser Ala
            245             250             255

Val Gln His Val Asn Leu Leu Lys Glu Trp Ser Asn Ser Leu Glu Lys
        260             265             270

Lys Val Ser Leu Leu Gln Asn Glu Ser Val Glu Lys Asn Lys Ser Ile
        275             280             285

Gln Ser Leu His Asn Gln Ile Cys Ser Phe Glu Ile Glu Ile Glu Arg
    290             295             300

Gln Lys Glu Met Leu Arg Asn Asn Glu Ser Lys Ile Leu His Leu Gln
305             310             315             320

Arg Val Ile Asp Ser Gln Ala Glu Lys Leu Lys Glu Leu Asp Lys Glu
            325             330             335

Ile Arg Pro Phe Arg Gln Asn Trp Glu Glu Ala Asp Ser Met Lys Ser
            340             345             350

Ser Val Glu Ser Leu Gln Asn Arg Val Thr Glu Leu Glu Ser Val Asp
        355             360             365

Lys Ser Ala Gly Gln Val Ala Arg Asn Thr Gly Leu Leu Glu Ser Gln
    370             375             380

Leu Ser Arg His Asp Gln Met Leu Ser Val His Asp Ile Arg Leu Ala
385             390             395             400
```

71

```
Asp Met Asp Leu Arg Phe Gln Val Leu Glu Thr Ala Ser Tyr Asn Gly
            405                 410                 415

Val Leu Ile Trp Lys Ile Arg Asp Tyr Lys Arg Arg Lys Gln Glu Ala
            420                 425                 430

Val Met Gly Lys Thr Leu Ser Leu Tyr Ser Gln Pro Phe Tyr Thr Gly
            435                 440                 445

Tyr Phe Gly Tyr Lys Met Cys Ala Arg Val Tyr Leu Asn Gly Asp Gly
        450                 455                 460

Met Gly Lys Gly Thr His Leu Ser Leu Phe Phe Val Ile Met Arg Gly
465                 470                 475                     480

Glu Tyr Asp Ala Leu Leu Pro Trp Pro Phe Lys Gln Lys Val Thr Leu
            485                 490                 495

Met Leu Met Asp Gln Gly Ser Ser Arg Arg His Leu Gly Asp Ala Phe
            500                 505                 510

Lys Pro Asp Pro Asn Ser Ser Ser Phe Lys Lys Pro Thr Gly Glu Met
            515                 520                 525

Asn Ile Ala Ser Gly Cys Pro Val Phe Val Ala Gln Thr Val Leu Glu
        530                 535                 540

Asn Gly Thr Tyr Ile Lys Asp Asp Thr Ile Phe Ile Lys Val Ile Val
545                 550                 555                     560

Asp Thr Ser Asp Leu Pro Asp Pro
                565


<210> 37
<211> 159
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: MATH domain
      sequence

<400> 37
Thr Ile Lys Asn Phe Ser Lys Ile Lys Glu Glu Ala Lys Glu Gly Arg
  1               5                 10                  15

Glu Gly Glu Glu Tyr Tyr Thr Ser Pro Val Glu Glu Arg Phe Asn Ile
```

Pro Trp Arg Leu Asn Val Leu Arg Ile Tyr Arg Asn Gly Gly Gly Glu
        35   40   45

Gly Arg Ser Gly Lys Phe Leu Gly Leu Tyr Leu His Cys Leu Lys Glu
        50   55   60

Glu Lys Asp Ser Pro Thr Ile Glu Asn Leu Lys Trp Ser Ile Glu Thr
65   70   75   80

Glu Phe Thr Leu Lys Leu Val Ser Asp Asn Gly Lys Ser Ile Arg Arg
                85   90   95

Met Ser Ser Thr Thr Leu Thr Lys Lys Thr Lys Asp Ala Lys Asn Asn
                100   105   110

Ser His Val Phe Glu Lys Pro Thr Gly Glu Gly Trp Gly Lys Ser Gly
        115   120   125

Phe Lys Lys Phe Ile Ser Trp Asp Asp Leu Glu Asp Asp Tyr Asn Gly
        130   135   140

Tyr Leu Val Asp Asp Ser Ile Ile Ile Glu Ala Glu Val Lys Ile
145   150   155

<210> 38
<211> 143
<212> PRT
<213> Homo sapiens

<400> 38
Lys Val Thr Asp Tyr Lys Met Lys Lys Arg Glu Ala Val Asp Gly His
  1   5   10   15

Thr Val Ser Ile Phe Ser Gln Ser Phe Tyr Thr Ser Arg Cys Gly Tyr
                20   25   30

Arg Leu Cys Ala Arg Ala Tyr Leu Asn Gly Asp Gly Ser Gly Arg Gly
        35   40   45

Ser His Leu Ser Leu Tyr Phe Val Val Met Arg Gly Glu Phe Asp Ser
        50   55   60

Leu Leu Gln Trp Pro Phe Arg Gln Arg Val Thr Leu Met Leu Leu Asp
65   70   75   80

Gln Ser Gly Lys Lys Asn Ile Met Glu Thr Phe Lys Pro Asp Pro Asn
                 85   90   95

Ser Ser Ser Phe Lys Arg Pro Asp Gly Glu Met Asn Ile Ala Ser Gly
             100   105   110

Cys Pro Arg Phe Val Ala His Ser Val Leu Glu Asn Ala Lys Asn Ala
             115   120   125

Tyr Ile Lys Asp Asp Thr Leu Phe Leu Lys Val Ala Val Asp Leu
         130   135   140

<210> 39
<211> 700
<212> PRT
<213> Homo sapiens

<400> 39
Leu Thr Asp Asn Phe Ile Ala Ala Val Arg Arg Arg Asp Phe Ala Asn
  1   5   10   15

Met Thr Ser Leu Val His Leu Thr Leu Ser Arg Asn Thr Ile Gly Gln
             20   25   30

Val Ala Ala Gly Ala Phe Ala Asp Leu Arg Ala Leu Arg Ala Leu His
             35   40   45

Leu Asp Ser Asn Arg Leu Ala Glu Val Arg Gly Asp Gln Leu Arg Gly
         50   55   60

Leu Gly Asn Leu Arg His Leu Ile Leu Gly Asn Asn Gln Ile Arg Arg
 65   70   75   80

Val Glu Ser Ala Ala Phe Asp Ala Phe Leu Ser Thr Val Glu Asp Leu
             85   90   95

Asp Leu Ser Tyr Asn Asn Leu Glu Ala Leu Pro Trp Glu Ala Val Gly
             100   105   110

Gln Met Val Asn Leu Asn Thr Leu Thr Leu Asp His Asn Leu Ile Asp
             115   120   125

His Ile Ala Glu Gly Thr Phe Val Gln Leu His Lys Leu Val Arg Leu
         130   135   140

Asp Met Thr Ser Asn Arg Leu His Lys Leu Pro Pro Asp Gly Leu Phe
145   150   155   160

74

Leu Arg Ser Gln Gly Thr Gly Pro Lys Pro Pro Thr Pro Leu Thr Val
                 165   170   175

Ser Phe Gly Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu
                 180   185   190

Arg Arg Leu Thr Arg Glu Asp Asp Leu Glu Thr Cys Ala Thr Pro Glu
                 195   200   205

His Leu Thr Asp Arg Tyr Phe Trp Ser Ile Pro Glu Glu Glu Phe Leu
                 210   215   220

Cys Glu Pro Pro Leu Ile Thr Arg Gln Ala Gly Gly Arg Ala Leu Val
225   230   235   240

Val Glu Gly Gln Ala Val Ser Leu Arg Cys Arg Ala Val Gly Asp Pro
                 245   250   255

Glu Pro Val Val His Trp Val Ala Pro Asp Gly Arg Leu Leu Gly Asn
                 260   265   270

Ser Ser Arg Thr Arg Val Arg Gly Asp Gly Thr Leu Asp Val Thr Ile
                 275   280   285

Thr Thr Leu Arg Asp Ser Gly Thr Phe Thr Cys Ile Ala Ser Asn Ala
                 290   295   300

Ala Gly Glu Ala Thr Ala Pro Val Glu Val Cys Val Val Pro Leu Pro
305   310   315   320

Leu Met Ala Pro Pro Pro Ala Ala Pro Pro Pro Leu Thr Glu Pro Gly
                 325   330   335

Ser Ser Asp Ile Ala Thr Pro Gly Arg Pro Gly Ala Asn Asp Ser Ala
                 340   345   350

Ala Glu Arg Arg Leu Val Ala Ala Glu Leu Thr Ser Asn Ser Val Leu
                 355   360   365

Ile Arg Trp Pro Ala Gln Arg Pro Val Pro Gly Ile Arg Met Tyr Gln
                 370   375   380

Val Gln Tyr Asn Ser Ser Val Asp Asp Ser Leu Val Tyr Arg Met Ile
385   390   395   400

Pro Ser Thr Ser Gln Thr Phe Leu Val Asn Asp Leu Ala Ala Gly Arg
                 405   410   415

75

```
Ala Tyr Asp Leu Cys Val Leu Ala Val Tyr Asp Asp Gly Ala Thr Ala
        420                 425             430

Leu Pro Ala Thr Arg Val Val Gly Cys Val Gln Phe Thr Thr Ala Gly
        435                 440             445

Asp Pro Ala Pro Cys Arg Pro Leu Arg Ala His Phe Leu Gly Gly Thr
    450                 455             460

Met Ile Ile Ala Ile Gly Gly Val Ile Val Ala Ser Val Leu Val Phe
465             470             475                 480

Ile Val Leu Leu Met Ile Arg Tyr Lys Val Tyr Gly Asp Gly Asp Ser
            485                 490             495

Arg Arg Val Lys Gly Ser Arg Ser Leu Pro Arg Val Ser His Val Cys
        500                 505             510

Ser Gln Thr Asn Gly Ala Gly Thr Gly Ala Ala Gln Ala Pro Ala Leu
        515                 520             525

Pro Ala Gln Asp His Tyr Glu Ala Leu Arg Glu Val Glu Ser Gln Ala
        530                 535                 540

Ala Pro Ala Val Ala Val Glu Ala Lys Ala Met Glu Ala Glu Thr Ala
545             550                 555                 560

Ser Ala Glu Pro Glu Val Val Leu Gly Arg Ser Leu Gly Gly Ser Ala
            565                 570                 575

Thr Ser Leu Cys Leu Leu Pro Ser Glu Glu Thr Ser Gly Glu Glu Ser
        580                 585                 590

Arg Ala Ala Val Gly Pro Arg Arg Ser Arg Ser Gly Ala Leu Glu Pro
        595                 600                 605

Pro Thr Ser Ala Pro Pro Thr Leu Ala Leu Val Pro Gly Gly Ala Ala
    610                 615                 620

Ala Arg Pro Arg Pro Gln Gln Arg Tyr Ser Phe Asp Gly Asp Tyr Gly
625                 630                 635                 640

Ala Leu Phe Gln Ser His Ser Tyr Pro Arg Arg Ala Arg Arg Thr Lys
            645                 650                 655

Arg His Arg Ser Thr Pro His Leu Asp Gly Ala Gly Gly Gly Ala Ala
            660                 665                 670
```

76

```
Gly Glu Asp Gly Asp Leu Gly Leu Gly Ser Ala Arg Ala Cys Leu Ala
        675                 680                 685

Phe Thr Ser Thr Glu Trp Met Leu Glu Ser Thr Val
        690                 695                 700


<210> 40
<211> 492
<212> PRT
<213> Mus musculus

<400> 40
Met Ala Pro Gly Pro Phe Ser Ser Arg Leu Phe Ser Pro Pro Pro Ala
 1               5                  10                  15

Ala Leu Pro Phe Leu Leu Leu Leu Trp Ala Gly Ala Ser Arg Ser Gln
                20                  25                  30

Pro Cys Pro Gly Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr
            35                  40                  45

Met Leu Cys Ala Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp
        50                  55                  60

Arg Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val
65                  70                  75                  80

Arg Arg Arg Asp Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu
                85                  90                  95

Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu
            100                 105                 110

Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val
        115                 120                 125

Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu
        130                 135                 140

Gly Asn Asn Gln Ile Arg Lys Val Glu Ser Ala Ala Phe Asp Ala Phe
145                 150                 155                 160

Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala
                165                 170                 175

Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr
```

Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln
        195   200   205

Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys
        210   215   220

Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Gly Gly Pro Lys
225   230   235   240

Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys
            245   250   255

Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu
        260   265   270

Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser
        275   280   285

Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln
        290   295   300

Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg
305   310   315   320

Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro
            325   330   335

Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp
        340   345   350

Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe
        355   360   365

Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu
        370   375   380

Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro
385   390   395   400

Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg
            405   410   415

Pro Gly Ala Asn Asp Ser Ala Thr Glu Arg Arg Leu Val Ala Ala Glu
        420   425   430

Leu Thr Ser Ser Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val

```
            435                440                445

Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Ala Asp Asp
    450                455              460


Ser Leu Val Tyr Ser Ser Ser Cys Pro Gly Thr His Tyr Val Asp Gln
465                470              475                480


Asp Gly Leu Glu Ile Arg Val Pro Leu Ala Ser Ala
                485                490



<210> 41
<211> 832
<212> PRT
<213> Homo sapiens

<400> 41
Leu Glu Ser Val Ser Gly Gly Glu Gly Cys Val Ala Glu Pro Gly Ser
  1               5                10               15


Pro Gly Ala Pro Arg Ser Arg Pro Arg Cys His Pro Ala Gly Gly Arg
                20              25              30


Cys Cys Leu Ala Gln Ala Leu Ser Asp Gln Thr Met Glu Thr Leu Leu
        35              40                45


Gly Gly Leu Leu Ala Phe Gly Met Ala Phe Ala Val Val Asp Ala Cys
    50              55              60


Pro Lys Tyr Cys Val Cys Gln Asn Leu Ser Glu Ser Leu Gly Thr Leu
65              70              75                80


Cys Pro Ser Lys Gly Leu Leu Phe Val Pro Pro Asp Ile Asp Arg Arg
            85              90              95


Thr Val Glu Leu Arg Leu Gly Gly Asn Phe Ile Ile His Ile Ser Arg
            100             105             110


Gln Asp Phe Ala Asn Met Thr Gly Leu Val Asp Leu Thr Leu Ser Arg
        115             120             125


Asn Thr Ile Ser His Ile Gln Pro Phe Ser Phe Leu Asp Leu Glu Ser
    130             135             140


Leu Arg Ser Leu His Leu Asp Ser Asn Arg Leu Pro Ser Leu Gly Glu
145             150             155             160


                              79
```

Asp Thr Leu Arg Gly Leu Val Asn Leu Gln His Leu Ile Val Asn Asn
            165   170   175

Asn Gln Leu Gly Gly Ile Ala Asp Glu Ala Phe Glu Asp Phe Leu Leu
            180   185   190

Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu His Gly Leu Pro
            195   200   205

Trp Asp Ser Val Arg Arg Met Val Asn Leu His Gln Leu Ser Leu Asp
      210   215   220

His Asn Leu Leu Asp His Ile Ala Glu Gly Thr Phe Ala Asp Leu Gln
225   230   235   240

Lys Leu Ala Arg Leu Asp Leu Thr Ser Asn Arg Leu Gln Lys Leu Pro
            245   250   255

Pro Asp Pro Ile Phe Ala Arg Ser Gln Ala Ser Ala Leu Thr Ala Thr
            260   265   270

Pro Phe Ala Pro Pro Leu Ser Phe Ser Phe Gly Gly Asn Pro Leu His
            275   280   285

Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Glu Arg Asp Asp Asp
      290   295   300

Leu Glu Thr Cys Gly Ser Pro Gly Gly Leu Lys Gly Arg Tyr Phe Trp
305   310   315   320

His Val Arg Glu Glu Glu Phe Val Cys Glu Pro Pro Leu Ile Thr Gln
            325   330   335

His Thr His Lys Leu Leu Val Leu Glu Gly Gln Ala Ala Thr Leu Lys
            340   345   350

Cys Lys Ala Ile Gly Asp Pro Ser Pro Leu Ile His Trp Val Ala Pro
            355   360   365

Asp Asp Arg Leu Val Gly Asn Ser Ser Arg Thr Ala Val Tyr Asp Asn
            370   375   380

Gly Thr Leu Asp Ile Phe Ile Thr Thr Ser Gln Asp Ser Gly Ala Phe
385   390   395   400

Thr Cys Ile Ala Ala Asn Ala Ala Gly Glu Ala Thr Ala Met Val Glu
            405   410   415

```
Val Ser Ile Val Gln Leu Pro His Leu Ser Asn Ser Thr Ser Arg Thr
            420                     425             430

Ala Pro Pro Lys Ser Arg Leu Ser Asp Ile Thr Gly Ser Ser Lys Thr
            435                     440             445

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Glu Pro Pro Lys Ser Pro
    450                     455             460

Pro Glu Arg Ala Val Leu Val Ser Glu Val Thr Thr Thr Ser Ala Leu
465                     470             475                 480

Val Lys Trp Ser Val Ser Lys Ser Ala Pro Arg Val Lys Met Tyr Gln
            485                     490             495

Leu Gln Tyr Asn Cys Ser Asp Asp Glu Val Leu Ile Tyr Arg Met Ile
            500                     505             510

Pro Ala Ser Asn Lys Ala Phe Val Val Asn Asn Leu Val Ser Gly Thr
            515                     520             525

Gly Tyr Asp Leu Cys Val Leu Ala Met Trp Asp Asp Thr Ala Thr Thr
    530                     535             540

Leu Thr Ala Thr Asn Ile Val Gly Cys Ala Gln Phe Phe Thr Lys Ala
545                     550             555                 560

Asp Tyr Pro Gln Cys Gln Ser Met His Ser Gln Ile Leu Gly Gly Thr
            565                     570             575

Met Ile Leu Val Ile Gly Gly Ile Ile Val Ala Thr Leu Leu Val Phe
            580                     585             590

Ile Val Ile Leu Met Val Arg Tyr Lys Val Cys Asn His Glu Ala Pro
            595                     600             605

Ser Lys Met Ala Ala Ala Val Ser Asn Val Tyr Ser Gln Thr Asn Gly
    610                     615             620

Ala Gln Pro Pro Pro Pro Ser Ser Ala Pro Ala Gly Ala Pro Pro Gln
625                     630             635                 640

Gly Pro Pro Lys Val Val Val Arg Asn Glu Leu Leu Asp Phe Thr Ala
            645                     650             655

Ser Leu Ala Arg Ala Ser Asp Ser Ser Ser Ser Ser Ser Leu Gly Ser
            660                     665             670
```

81

Gly Glu Ala Ala Gly Leu Gly Arg Ala Pro Trp Arg Ile Pro Pro Ser
        675   680   685

Ala Pro Arg Pro Lys Pro Ser Leu Asp Arg Leu Met Gly Ala Phe Ala
        690   695   700

Ser Leu Asp Leu Lys Ser Gln Arg Lys Glu Glu Leu Leu Asp Ser Arg
705   710   715   720

Thr Pro Ala Gly Arg Gly Ala Gly Thr Ser Ala Arg Gly His His Ser
                725   730   735

Asp Arg Glu Pro Leu Leu Gly Pro Pro Ala Ala Arg Ala Arg Ser Leu
        740   745   750

Leu Pro Leu Pro Leu Glu Gly Lys Ala Lys Arg Ser His Ser Phe Asp
        755   760   765

Met Gly Asp Phe Ala Ala Ala Ala Ala Gly Gly Val Val Pro Gly Gly
        770   775   780

Tyr Ser Pro Pro Arg Lys Val Ser Asn Ile Trp Thr Lys Arg Ser Leu
785   790   795   800

Ser Val Asn Gly Met Leu Leu Pro Phe Glu Glu Ser Asp Leu Val Gly
                805   810   815

Ala Arg Gly Thr Phe Gly Ser Ser Glu Trp Val Met Glu Ser Thr Val
                820   825   830

<210> 42
<211> 789
<212> PRT
<213> Cynomolgus monkey

<400> 42
Met Glu Thr Leu Leu Gly Gly Leu Leu Ala Phe Gly Met Ala Phe Ala
  1   5   10   15

Val Val Asp Ala Cys Pro Lys Tyr Cys Val Cys Gln Asn Leu Ser Glu
                20   25   30

Ser Leu Gly Thr Leu Cys Pro Ser Lys Gly Leu Leu Phe Val Pro Pro
        35   40   45

82

```
Asp Ile Asp Arg Arg Thr Val Glu Leu Arg Leu Gly Gly Asn Phe Ile
    50                  55                  60

Ile His Ile Ser Arg Gln Asp Phe Ala Asn Met Thr Gly Leu Val Asp
65                  70                  75                  80

Leu Thr Leu Ser Arg Asn Thr Ile Ser His Ile Gln Pro Phe Ser Phe
                85                  90                  95

Leu Asp Leu Glu Ser Leu Arg Ser Leu His Leu Asp Ser Asn Arg Leu
            100                 105                 110

Pro Ser Leu Gly Glu Asp Thr Leu Arg Gly Leu Val Asn Leu Gln His
            115                 120                 125

Leu Ile Val Asn Asn Asn Gln Leu Gly Gly Ile Ala Asp Glu Ala Phe
    130                 135                 140

Glu Asp Phe Leu Leu Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn
145                 150                 155                 160

Leu His Gly Leu Pro Trp Asp Ser Val Arg Arg Met Val Asn Leu His
            165                 170                 175

Gln Leu Ser Leu Asp His Asn Leu Leu Asp His Ile Ala Glu Gly Thr
            180                 185                 190

Phe Ala Asp Leu Gln Lys Leu Ala Arg Leu Asp Leu Thr Ser Asn Arg
            195                 200                 205

Leu Gln Lys Leu Pro Pro Asp Pro Ile Phe Ala Arg Ser Gln Ala Ser
    210                 215                 220

Ala Leu Thr Ala Thr Pro Phe Ala Pro Pro Leu Ser Phe Ser Phe Gly
225                 230                 235                 240

Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu
            245                 250                 255

Glu Arg Asp Asp Asp Leu Glu Thr Cys Gly Ser Pro Gly Gly Leu Lys
            260                 265                 270

Gly Arg Tyr Phe Trp His Val Arg Glu Glu Glu Phe Val Cys Glu Pro
            275                 280                 285

Pro Leu Ile Thr Gln His Thr His Lys Leu Leu Val Leu Glu Gly Gln
    290                 295                 300
```

83

Ala Ala Thr Leu Lys Cys Lys Ala Ile Gly Asp Pro Ser Pro Leu Ile
305   310   315   320

His Trp Val Ala Pro Asp Asp Arg Leu Val Gly Asn Ser Ser Arg Thr
                325   330   335

Ala Val Tyr Asp Asn Gly Thr Leu Asp Ile Phe Ile Thr Thr Ser Gln
            340   345   350

Asp Ser Gly Ala Phe Thr Cys Ile Ala Ala Asn Ala Ala Gly Glu Ala
            355   360   365

Thr Ala Thr Val Glu Val Ser Ile Val Gln Leu Pro His Leu Ser Asn
    370   375   380

Ser Thr Ser Arg Thr Ala Pro Pro Lys Ser Arg Leu Ser Asp Ile Thr
385   390   395   400

Gly Ser Ser Lys Thr Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Glu
            405   410   415

Pro Pro Lys Ser Pro Pro Glu Arg Ala Val Leu Val Ser Glu Val Thr
            420   425   430

Thr Thr Ser Ala Leu Ala Lys Trp Ser Val Ser Lys Ser Thr Pro Arg
            435   440   445

Val Lys Met Tyr Gln Leu Gln Tyr Asn Cys Ser Asp Asp Glu Val Leu
    450   455   460

Ile Tyr Arg Met Ile Pro Ala Ser Asn Lys Ala Phe Val Val Asn Asn
465   470   475   480

Leu Val Ser Gly Thr Gly Tyr Asp Leu Cys Val Leu Ala Met Trp Asp
            485   490   495

Asp Thr Ala Thr Thr Leu Thr Ala Thr Asn Ile Val Gly Cys Ala Gln
            500   505   510

Phe Phe Thr Lys Ala Asp Tyr Pro Gln Cys Gln Ser Met His Ser Gln
            515   520   525

Ile Leu Gly Gly Thr Met Ile Leu Val Ile Gly Gly Ile Ile Val Ala
            530   535   540

Thr Leu Leu Val Phe Ile Val Ile Leu Met Val Arg Tyr Lys Val Cys
545   550   555   560

84

```
Asn His Glu Ala Pro Ser Lys Met Ala Ala Ala Val Ser Asn Val Tyr
                565                 570                 575

Ser Gln Thr Asn Gly Ala Gln Pro Pro Pro Pro Ser Ser Ala Pro Ala
                580                 585                 590

Gly Ala Pro Pro Gln Gly Pro Pro Lys Val Val Val Arg Asn Glu Leu
            595                 600                 605

Leu Asp Phe Thr Ala Ser Leu Ala Arg Ala Ser Asp Ser Ser Ser Ser
    610                 615                 620

Ser Ser Leu Gly Ser Gly Glu Ala Ala Gly Leu Gly Arg Ala Pro Trp
625                 630                 635                 640

Arg Leu Pro Pro Ser Ala Pro Arg Pro Lys Pro Ser Leu Asp Arg Leu
                645                 650                 655

Met Gly Ala Phe Ala Ser Leu Asp Leu Lys Ser Gln Arg Lys Glu Glu
                660                 665                 670

Leu Leu Asp Ser Arg Thr Pro Ala Gly Arg Gly Ala Gly Thr Ser Ala
            675                 680                 685

Arg Gly His His Ser Asp Arg Glu Pro Leu Leu Gly Pro Pro Ala Ala
            690                 695                 700

Arg Ala Arg Ser Leu Leu Pro Leu Pro Leu Glu Gly Lys Ala Lys Arg
705                 710                 715                 720

Ser His Ser Phe Asp Met Gly Asp Phe Ala Ala Ala Ala Ala Gly Gly
                725                 730                 735

Val Val Pro Gly Gly Tyr Ser Pro Pro Arg Arg Val Ser Asn Ile Trp
            740                 745                 750

Thr Lys Arg Ser Leu Ser Val Asn Gly Met Leu Leu Pro Phe Glu Glu
            755                 760                 765

Ser Asp Leu Val Gly Ala Arg Gly Thr Phe Gly Ser Ser Glu Trp Val
    770                 775                 780

Met Glu Ser Thr Val
785


<210> 43
```

<211> 788
<212> PRT
<213> Mus musculus

<400> 43

```
Met Glu Thr Leu Leu Gly Gly Leu Leu Ala Phe Gly Met Ala Phe Ala
 1               5                  10                  15

Val Val Asp Ala Cys Pro Lys Tyr Cys Val Cys Gln Asn Leu Ser Glu
                20                  25                  30

Ser Leu Gly Thr Leu Cys Pro Ser Lys Arg Leu Leu Phe Val Pro Pro
            35                  40                  45

Asp Ile Asp Arg Arg Thr Val Glu Leu Arg Leu Gly Gly Asn Phe Ile
        50                  55                  60

Ile His Ile Gly Arg Gln Asp Phe Ala Asn Met Thr Gly Leu Val Asp
65                  70                  75                  80

Leu Thr Leu Ser Arg Asn Thr Ile Ser His Ile Gln Pro Phe Ser Phe
                85                  90                  95

Leu Asp Leu Glu Ser Leu Arg Ser Leu His Leu Asp Ser Asn Arg Leu
            100                 105                 110

Pro Ser Leu Gly Glu Asp Thr Leu Arg Gly Leu Val Asn Leu Gln His
            115                 120                 125

Leu Ile Val Asn Asn Asn Gln Leu Gly Gly Ile Ala Asp Asp Ala Phe
        130                 135                 140

Glu Asp Phe Leu Leu Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn
145                 150                 155                 160

Leu His Gly Leu Pro Trp Asp Ser Val Arg Arg Met Val Asn Leu His
                165                 170                 175

Gln Leu Ser Leu Asp His Asn Leu Leu Asp His Ile Ala Glu Gly Thr
            180                 185                 190

Phe Ala Asp Leu Gln Lys Leu Ala Arg Leu Asp Leu Thr Ser Asn Arg
            195                 200                 205

Leu Gln Lys Leu Pro Pro Asp Pro Ile Phe Ala Arg Ser Gln Ala Ser
        210                 215                 220

Leu Leu Thr Ala Thr Pro Phe Ala Pro Pro Leu Ser Phe Ser Phe Gly
```

Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu
            245   250   255

Glu Arg Asp Asp Asp Leu Glu Thr Cys Gly Ser Pro Gly Ser Leu Lys
            260   265   270

Gly Arg Tyr Phe Trp His Ile Arg Glu Glu Glu Phe Val Cys Glu Pro
            275   280   285

Pro Leu Ile Thr Gln His Thr His Lys Leu Leu Val Leu Glu Gly Gln
    290   295   300

Ala Ala Thr Leu Lys Cys Lys Ala Ile Gly Asp Pro Ser Pro Leu Ile
305   310   315   320

His Trp Val Ala Pro Asp Asp Arg Leu Val Gly Asn Ser Ser Arg Thr
            325   330   335

Ala Val Tyr Asp Asn Gly Thr Leu Asp Ile Leu Ile Thr Thr Ser Gln
            340   345   350

Asp Ser Gly Pro Phe Thr Cys Ile Ala Ala Asn Ala Ala Gly Glu Ala
            355   360   365

Thr Ala Thr Val Glu Val Ser Ile Val Gln Leu Pro His Leu Ser Asn
    370   375   380

Ser Thr Ser Arg Met Ala Pro Pro Lys Ser Arg Leu Ser Asp Ile Thr
385   390   395   400

Gly Ser Ser Lys Thr Ser Arg Gly Gly Gly Gly Ser Gly Ala Gly Glu
            405   410   415

Pro Pro Lys Ser Thr Pro Glu Arg Ala Val Leu Val Ser Asp Val Thr
            420   425   430

Thr Thr Ser Ala Leu Val Lys Trp Ser Val Ser Lys Ser Ala Pro Arg
            435   440   445

Val Lys Met Tyr Gln Leu Gln Tyr Asn Cys Ser Asp Asp Glu Val Leu
    450   455   460

Ile Tyr Arg Met Ile Pro Ala Ser Asn Lys Ala Phe Val Val Asn Asn
465   470   475   480

Leu Val Ser Gly Thr Gly Tyr Asp Leu Cys Val Leu Ala Met Trp Asp

```
                    485                    490                    495

Asp Thr Ala Thr Thr Leu Thr Ala Thr Asn Ile Val Gly Cys Ala Gln
            500                    505                    510

Phe Phe Thr Lys Ala Asp Tyr Pro Gln Cys Gln Ser Met His Ser Gln
            515                    520                    525

Ile Lys Gly Gly Thr Met Ile Leu Val Ile Gly Gly Ile Ile Val Ala
            530                    535                    540

Thr Leu Leu Val Phe Ile Val Ile Leu Met Val Arg Tyr Lys Val Cys
545                    550                    555                    560

Asn His Asp Thr Pro Gly Lys Met Ala Ala Ala Thr Val Ser Asn Val
                565                    570                    575

Tyr Ser Gln Thr Asn Gly Ser Gln Pro Pro Pro Leu Gly Gly Ile Pro
            580                    585                    590

Val Gly Gln Leu Pro Gln Ala Pro Pro Lys Val Val Val Arg Asn Glu
                595                    600                    605

Leu Met Asp Phe Ser Thr Ser Leu Ala Arg Ala Cys Asp Ser Ser Ser
                610                    615                    620

Ser Ser Ser Leu Gly Ser Gly Glu Ala Ala Gly Leu Gly Arg Gly Pro
625                    630                    635                    640

Trp Arg Leu Pro Pro Pro Ala Pro Arg Pro Lys Pro Ser Leu Asp Arg
                645                    650                    655

Leu Met Gly Ala Phe Ala Ser Leu Asp Leu Lys Ser Gln Arg Lys Glu
                660                    665                    670

Glu Leu Leu Asp Ser Arg Thr Pro Ala Gly Arg Gly Ala Gly Thr Ser
                675                    680                    685

Ser Arg Gly His His Ser Asp Arg Glu Pro Leu Leu Gly Pro Pro Ala
            690                    695                    700

Thr Arg Ala Arg Ser Leu Leu Pro Leu Pro Leu Glu Gly Lys Ala Lys
705                    710                    715                    720

Arg Ser His Ser Phe Asp Met Gly Asp Phe Ala Ala Ala Ala Ala Ala
                725                    730                    735

Val Pro Gly Gly Tyr Ser Pro Pro Arg Arg Val Ser Asn Ile Trp Thr

                              88
```

```
                  740                    745                    750

Lys Arg Ser Leu Ser Val Asn Gly Met Leu Leu Pro Phe Glu Glu Ser
        755                    760                    765

Asp Leu Val Gly Ala Arg Gly Thr Phe Gly Ser Ser Glu Trp Val Met
    770                    775                    780

Glu Ser Thr Val
785


<210> 44
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  LRR, Leucine
      Rich Repeat domain sequence

<400> 44
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
  1               5                    10                    15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
            20                    25


<210> 45
<211> 24
<212> PRT
<213> Homo sapiens

<400> 45
Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val Arg
  1               5                    10                    15

Arg Arg Asp Phe Ala Asn Met Thr
            20


<210> 46
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
```

<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 46
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
  1   5   10   15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
            20   25

<210> 47
<211> 24
<212> PRT
<213> Homo sapiens

<400> 47
Ser Leu Val His Leu Thr Leu Ser Arg Asn Thr Ile Gly Gln Val Ala
  1   5   10   15

Ala Gly Ala Phe Ala Asp Leu Arg
            20

<210> 48
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 48
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
  1   5   10   15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
            20   25

<210> 49
<211> 24
<212> PRT
<213> Homo sapiens

<400> 49
Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val Arg

```
                1               5                    10                   15

Gly Asp Gln Leu Arg Gly Leu Gly
                    20


<210> 50
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  LRR, Leucine
      Rich Repeat domain sequence

<400> 50
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
   1               5                    10                   15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
                20                   25


<210> 51
<211> 24
<212> PRT
<213> Homo sapiens

<400> 51
Asn Leu Arg His Leu Ile Leu Gly Asn Asn Gln Ile Arg Arg Val Glu
   1               5                    10                   15

Ser Ala Ala Phe Asp Ala Phe Leu
                20


<210> 52
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  LRR, Leucine
      Rich Repeat domain sequence

<400> 52
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
   1               5                    10                   15
```

Pro Pro Glu Ser Phe Gly Asn Leu Pro
            20   25

<210> 53
<211> 24
<212> PRT
<213> Homo sapiens

<400> 53
Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala Leu Pro
  1   5   10   15

Trp Glu Ala Val Gly Gln Met Val
            20

<210> 54
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 54
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
  1   5   10   15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
            20   25

<210> 55
<211> 24
<212> PRT
<213> Homo sapiens

<400> 55
Asn Leu Asn Thr Leu Thr Leu Asp His Asn Leu Ile Asp His Ile Ala
  1   5   10   15

Glu Gly Thr Phe Val Gln Leu His
            20

<210> 56
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 56
Asn Leu Glu Glu Leu Asp Leu Ser Asn Asn Asn Leu Ser Gly Ser Leu
  1   5   10   15

Pro Pro Glu Ser Phe Gly Asn Leu Pro
            20   25

<210> 57
<211> 23
<212> PRT
<213> Homo sapiens

<400> 57
Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys Leu Pro
  1   5   10   15

Pro Asp Gly Leu Phe Leu Arg
            20

<210> 58
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: LRR, Leucine
      Rich Repeat domain sequence

<400> 58
Asn Pro Phe Asn Cys Asp Cys Glu Leu Arg Trp Leu Leu Arg Trp Leu
  1   5   10   15

Arg Glu Thr Asn Pro Arg Arg Leu Glu Asp Gln Glu Asp Leu Arg Cys
            20   25   30

Ala Ser Pro Glu Ser Leu Arg Gly Gln Pro Leu Leu Glu Leu Leu Pro
            35   40   45

93

```
Ser Asp Phe Ser Cys Pro
        50


<210> 59
<211> 46
<212> PRT
<213> Homo sapiens

<400> 59
Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr
  1               5                  10                  15


Arg Glu Asp Asp Leu Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp
            20                  25                  30


Arg Tyr Phe Trp Ser Ile Pro Glu Glu Glu Phe Leu Cys Glu
        35                  40                  45



<210> 60
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Immunoglobin
      domain sequence

<400> 60
Gly Glu Ser Val Thr Leu Thr Cys Ser Val Ser Gly Phe Gly Pro Pro
  1               5                  10                  15


Pro Val Thr Trp Leu Arg Asn Gly Lys Leu Ser Leu Thr Ile Ser Val
            20                  25                  30


Thr Pro Glu Asp Ser Gly Gly Thr Tyr Thr Cys Val Val
        35                  40                  45



<210> 61
<211> 59
<212> PRT
<213> Homo sapiens

<400> 61
Gly Gln Ala Val Ser Leu Arg Cys Arg Ala Val Gly Asp Pro Glu Pro
```

94

```
        1                   5                          10                              15
    Val Val His Trp Val Ala Pro Asp Gly Arg Leu Leu Gly Asn Ser Ser
                    20                          25                          30

    Arg Thr Arg Val Arg Gly Asp Gly Thr Leu Asp Val Thr Ile Thr Thr
                    35                          40                          45

    Leu Arg Asp Ser Gly Thr Phe Thr Cys Ile Ala
            50                          55


    <210> 62
    <211> 84
    <212> PRT
    <213> Artificial Sequence

    <220>
    <223> Description of Artificial Sequence: Fibronectin
          Type III domain sequence

    <400> 62
    Pro Ser Ala Pro Thr Asn Leu Thr Val Thr Asp Val Thr Ser Thr Ser
      1                   5                          10                              15

    Leu Thr Leu Ser Trp Ser Pro Pro Thr Gly Asn Gly Pro Ile Thr Gly
                    20                          25                          30

    Tyr Glu Val Thr Tyr Arg Gln Pro Lys Asn Gly Gly Glu Trp Asn Glu
                    35                          40                          45

    Leu Thr Val Pro Gly Thr Thr Thr Ser Tyr Thr Leu Thr Gly Leu Lys
            50                          55                          60

    Pro Gly Thr Glu Tyr Glu Val Arg Val Gln Ala Val Asn Gly Gly Gly
      65                          70                          75                              80

    Gly Pro Glu Ser


    <210> 63
    <211> 81
    <212> PRT
    <213> Homo sapiens

    <400> 63
    Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu Leu Thr Ser Asn Ser
```

```
      1                 5                      10                      15

Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val Pro Gly Ile Arg Met
                20                  25                  30

Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp Ser Leu Val Tyr Arg
            35                  40                  45

Met Ile Pro Ser Thr Ser Gln Thr Phe Leu Val Asn Asp Leu Ala Ala
        50                  55                  60

Gly Arg Ala Tyr Asp Leu Cys Val Leu Ala Val Tyr Asp Asp Gly Ala
65                  70                  75                      80

Thr
```

<210> 64
<211> 405
<212> PRT
<213> Homo sapiens

<400> 64

```
Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser
  1                 5                      10                  15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala
                20                  25                  30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro
            35                  40                  45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr
        50                  55                  60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg
65                  70                  75                      80

Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser
                85                  90                  95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala
                100                 105                 110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe
                115                 120                 125
```

```
His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro
    130             135             140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys
145             150             155             160

His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala
            165             170             175

Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp
            180             185             190

Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg
            195             200             205

Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Glu Asp Asp
    210             215             220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu
225             230             235             240

Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu
            245             250             255

Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp
            260             265             270

Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser
            275             280             285

Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr
    290             295             300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Asn
305             310             315             320

Gly Glu Gly Gln Arg Gly Arg Met Asp Arg Gly Asn Ser Leu Pro Cys
            325             330             335

Val Leu Glu Gln Lys Ile Tyr Pro Tyr Glu Met Leu Val Val Thr Asn
            340             345             350

Lys Gly Arg Thr Lys Leu Pro Pro Gly Val Asp Arg Met Arg Leu Glu
            355             360             365

Arg His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro
    370             375             380
```

97

Glu Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys
385   390   395   400

Lys Ala Ser Leu Phe
                405

<210> 65
<211> 383
<212> PRT
<213> Homo sapiens

<400> 65
Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser
 1   5   10   15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala
            20   25   30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro
        35   40   45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr
    50   55   60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg
 65   70   75   80

Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser
            85   90   95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala
            100   105   110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe
            115   120   125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro
    130   135   140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys
145   150   155   160

His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala
                165   170   175

Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp
            180   185   190

98

Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg
        195   200   205

Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Glu Asp Asp
        210   215   220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu
225   230   235   240

Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu
                245   250   255

Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp
            260   265   270

Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser
        275   280   285

Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr
        290   295   300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Asp Pro Gln Ile
305   310   315   320

Tyr Pro Tyr Glu Met Leu Val Val Thr Asn Lys Gly Arg Thr Lys Leu
            325   330   335

Pro Pro Gly Val Asp Arg Met Arg Leu Glu Arg His Leu Ser Ala Glu
            340   345   350

Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu Glu Phe Gly Lys Leu
        355   360   365

Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys Ala Ser Leu Phe
        370   375   380

<210> 66
<211> 383
<212> PRT
<213> Homo sapiens

<400> 66
Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser
  1   5   10   15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala

99

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro
        35   40   45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr
    50   55   60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg
65   70   75   80

Gln Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser
                85   90   95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala
                100   105   110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe
            115   120   125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro
    130   135   140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys
145   150   155   160

His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala
                165   170   175

Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp
            180   185   190

Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg
    195   200   205

Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Glu Asp Asp
    210   215   220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu
225   230   235   240

Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu
            245   250   255

Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp
            260   265   270

Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser

Ser Leu Pro Arg Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr
    290   295   300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Ile
305   310   315   320

Tyr Pro Tyr Glu Val Leu Val Val Thr Asn Lys Gly Arg Thr Lys Leu
                325   330   335

Pro Pro Gly Val Asp Arg Met Arg Leu Glu Arg His Leu Ser Ala Glu
                340   345   350

Asp Phe Ser Arg Val Ser Ala Met Ser Pro Glu Glu Phe Gly Lys Leu
                355   360   365

Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys Ala Ser Leu Phe
    370   375   380

<210> 67
<211> 405
<212> PRT
<213> Homo sapiens

<400> 67
Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser
  1   5   10   15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala
                20   25   30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro
            35   40   45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr
    50   55   60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg
65   70   75   80

Gln Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser
                85   90   95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala
                100   105   110

```
Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe
        115             120             125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro
        130             135             140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys
145             150             155             160

His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala
            165             170             175

Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp
        180             185             190

Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg
        195             200             205

Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Glu Asp Asp
        210             215             220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu
225             230             235             240

Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu
            245             250             255

Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp
            260             265             270

Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser
        275             280             285

Ser Leu Pro Arg Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr
        290             295             300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Gly Leu Gln Asn
305             310             315             320

Gly Glu Gly Gln Arg Gly Arg Met Asp Arg Gly Asn Ser Leu Pro Cys
            325             330             335

Val Leu Glu Gln Lys Ile Tyr Pro Tyr Glu Met Leu Val Val Thr Asn
            340             345             350

Lys Gly Arg Thr Lys Leu Pro Pro Gly Val Asp Arg Met Arg Leu Glu
        355             360             365
```

Arg His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro
    370   375   380

Glu Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys
385   390   395   400

Lys Ala Ser Leu Phe
                405

<210> 68
<211> 405
<212> PRT
<213> Homo sapiens

<400> 68
Met Glu Arg Leu Gln Lys Gln Pro Leu Thr Ser Pro Gly Ser Val Ser
  1   5   10   15

Pro Ser Arg Asp Ser Ser Val Pro Gly Ser Pro Ser Ser Ile Val Ala
                20   25   30

Lys Met Asp Asn Gln Val Leu Gly Tyr Lys Asp Leu Ala Ala Ile Pro
            35   40   45

Lys Asp Lys Ala Ile Leu Asp Ile Glu Arg Pro Asp Leu Met Ile Tyr
    50   55   60

Glu Pro His Phe Thr Tyr Ser Leu Leu Glu His Val Glu Leu Pro Arg
 65   70   75   80

Ser Arg Glu Arg Ser Leu Ser Pro Lys Ser Thr Ser Pro Pro Pro Ser
                85   90   95

Pro Glu Val Trp Ala Asp Ser Arg Ser Pro Gly Ile Ile Ser Gln Ala
                100   105   110

Ser Ala Pro Arg Thr Thr Gly Thr Pro Arg Thr Ser Leu Pro His Phe
            115   120   125

His His Pro Glu Thr Ser Arg Pro Asp Ser Asn Ile Tyr Lys Lys Pro
    130   135   140

Pro Ile Tyr Lys Gln Arg Glu Ser Val Gly Gly Ser Pro Gln Thr Lys
145   150   155   160

His Leu Ile Glu Asp Leu Ile Ile Glu Ser Ser Lys Phe Pro Ala Ala
                165   170   175

```
Gln Pro Pro Asp Pro Asn Gln Pro Ala Lys Ile Glu Thr Asp Tyr Trp
        180                 185                 190

Pro Cys Pro Pro Ser Leu Ala Val Val Glu Thr Glu Trp Arg Lys Arg
        195                 200                 205

Lys Ala Ser Arg Arg Gly Ala Glu Glu Glu Glu Glu Glu Glu Asp Asp
    210                 215                 220

Asp Ser Gly Glu Glu Met Lys Ala Leu Arg Glu Arg Gln Arg Glu Glu
225                 230                 235                 240

Leu Ser Lys Val Thr Ser Asn Leu Gly Lys Met Ile Leu Lys Glu Glu
                245                 250                 255

Met Glu Lys Ser Leu Pro Ile Arg Arg Lys Thr Arg Ser Leu Pro Asp
        260                 265                 270

Arg Thr Pro Phe His Thr Ser Leu His Gln Gly Thr Ser Lys Ser Ser
        275                 280                 285

Ser Leu Pro Ala Tyr Gly Arg Thr Thr Leu Ser Arg Leu Gln Ser Thr
    290                 295                 300

Glu Phe Ser Pro Ser Gly Ser Glu Thr Gly Ser Pro Ala Pro Gln Asn
305                 310                 315                 320

Gly Glu Gly Gln Arg Gly Arg Met Asp Arg Gly Asn Ser Leu Pro Cys
                325                 330                 335

Val Leu Glu Gln Lys Ile Tyr Pro Tyr Glu Met Leu Val Val Thr Asn
        340                 345                 350

Lys Gly Arg Thr Lys Leu Pro Pro Gly Val Asp Arg Met Arg Leu Glu
        355                 360                 365

Arg His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro
        370                 375                 380

Glu Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys
385                 390                 395                 400

Lys Ala Ser Leu Phe
                405


<210> 69
```

104

```
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VHP, Villin
      headpiece domain sequence

<400> 69
Tyr Leu Ser Asp Glu Asp Phe Glu Glu Val Phe Gly Met Thr Lys Glu
 1               5                   10                  15


Glu Phe Tyr Lys Leu Pro Leu Trp Lys Gln Asn Gln Leu Lys Lys Lys
            20                  25                  30


Leu Gly Leu Phe
        35



<210> 70
<211> 36
<212> PRT
<213> Homo sapiens

<400> 70
His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu
 1               5                   10                  15


Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys
            20                  25                  30


Ala Ser Leu Phe
        35



<210> 71
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VHP, Villin
      headpiece domain sequence

<400> 71
Tyr Leu Ser Asp Glu Asp Phe Glu Glu Val Phe Gly Met Thr Lys Glu
 1               5                   10                  15
```

Glu Phe Tyr Lys Leu Pro Ala Trp Lys Gln Asn Gln Leu Lys Lys Lys
            20   25   30

Leu Gly Leu Phe
        35

<210> 72
<211> 36
<212> PRT
<213> Homo sapiens

<400> 72
His Leu Ser Ala Glu Asp Phe Ser Arg Val Phe Ala Met Ser Pro Glu
  1   5   10   15

Glu Phe Gly Lys Leu Ala Leu Trp Lys Arg Asn Glu Leu Lys Lys Lys
            20   25   30

Ala Ser Leu Phe
        35

<210> 73
<211> 959
<212> PRT
<213> Homo sapiens

<400> 73
Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile
  1   5   10   15

Val Leu Leu Pro Cys Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile
            20   25   30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu
        35   40   45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
    50   55   60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
 65   70   75   80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
                85   90   95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys

106

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
    115   120   125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
    130   135   140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
145   150   155   160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
         165   170   175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe
        180   185   190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly
        195   200   205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
    210   215   220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His
225   230   235   240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile
        245   250   255

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser
        260   265   270

Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His
        275   280   285

Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Glu
    290   295   300

Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala
305   310   315   320

Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val
        325   330   335

Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu
        340   345   350

Asn Pro Asp Glu Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser

```
              355                      360                      365

Asn His Gly Cys Gln Tyr Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser
    370                      375                  380

Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys
385                      390                  395                  400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu
            405                  410                  415

Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr
            420                  425                  430

Thr Leu Asp Pro Asn Gly Lys Pro Cys Ser Arg Val Asp His Cys Ala
        435                  440                  445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser
    450                  455                  460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys
465                  470                  475                  480

Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu
            485                  490                  495

Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu
            500                  505                  510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser
        515                  520                  525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu
    530                  535                  540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp
545                  550                  555                  560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly
            565                  570                  575

Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys
            580                  585                  590

Leu Glu Gly Phe Arg Leu Thr Glu Asp Gly Lys Arg Cys Arg Ile Ser
        595                  600                  605

Ser Gly Lys Asp Val Cys Lys Ser Thr His His Gly Cys Glu His Ile
```

Cys Val Asn Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe
625   630   635   640

Val Leu Ala Glu Asp Gly Arg Arg Cys Lys Lys Cys Thr Glu Gly Pro
                  645   650   655

Ile Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu
                  660   665   670

Asn Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu
                  675   680   685

Thr Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr
                  690   695   700

Gln Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp
705   710   715   720

Met Lys Lys Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met
                  725   730   735

Thr Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly
                  740   745   750

Glu Gly Ala Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala Ile Val
                  755   760   765

Phe Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys
                  770   775   780

Ala Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala
785   790   795   800

Ile Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His
                  805   810   815

Leu Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys
                  820   825   830

Leu Lys Lys Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln
                  835   840   845

Asp Ser Pro Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro Thr Glu
                  850   855   860

Ser Glu Pro Val Thr Ile Asn Ile Gln Asp Leu Leu Ser Cys Ser Asn

Phe Ala Val Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu Leu Arg
                    885   890   895

Ser Thr Gln Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser Pro Leu
                    900   905   910

Glu Glu Lys His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe Gln
                    915   920   925

Asn Leu Ala Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu
                    930   935   940

Met Thr Gln Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg
945   950   955

<210> 74
<211> 956
<212> PRT
<213> Homo sapiens

<400> 74
Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile
  1   5   10   15

Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile
                    20   25   30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu
                    35   40   45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
          50   55   60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
65   70   75   80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
                    85   90   95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
                    100   105   110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
                    115   120   125

```
His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
    130             135             140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
145             150             155             160

Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
            165             170             175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe
            180             185             190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly
            195             200             205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
    210             215             220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His
225             230             235             240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile
            245             250             255

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser
            260             265             270

Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His
            275             280             285

Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln
    290             295             300

Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala
305             310             315             320

Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val
            325             330             335

Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu
            340             345             350

Asn Pro Asp Lys Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser
    355             360             365

Asn His Gly Cys Gln His Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser
    370             375             380
```

```
Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys
385             390             395             400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu
            405             410             415

Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr
            420             425             430

Thr Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala
            435             440             445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser
    450             455             460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys
465             470             475             480

Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu
            485             490             495

Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu
            500             505             510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser
            515             520             525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu
    530             535             540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp
545             550             555             560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly
            565             570             575

Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys
            580             585             590

Leu Val Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys
            595             600             605

Asp Val Cys Lys Ser Thr His His Gly Cys Glu His Ile Cys Val Asn
    610             615             620

Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe Val Leu Ala
625             630             635             640

                          112
```

```
Glu Asp Gly Arg Arg Cys Lys Lys Cys Thr Glu Gly Pro Ile Asp Leu
            645                 650                 655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu
            660                 665                 670

Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr Ile Ser
            675                 680                 685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val His
      690                 695                 700

Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp Met Lys Lys
705                 710                 715                 720

Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu
            725                 730                 735

Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu Gly Ala
            740                 745                 750

Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe Thr Asp
      755                 760                 765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala
      770                 775                 780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu
785                 790                 795                 800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His Leu Phe Tyr
            805                 810                 815

Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys Leu Lys Lys
            820                 825                 830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln Asp Ser Pro
            835                 840                 845

Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro Thr Glu Ser Glu Pro
      850                 855                 860

Val Thr Ile Asn Ile Gln Asp Leu Leu Ser Cys Ser Asn Phe Ala Val
865                 870                 875                 880

Gln His Arg Tyr Leu Phe Glu Glu Asp Asn Leu Leu Arg Ser Thr Gln
            885                 890                 895
```

113

```
Lys Leu Ser His Ser Thr Lys Pro Ser Gly Ser Pro Leu Glu Glu Lys
            900             905             910

His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe Gln Asn Leu Ala
            915             920             925

Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln
    930             935             940

Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg
945             950             955


<210> 75
<211> 937
<212> PRT
<213> Homo sapiens

<400> 75
Met Glu Lys Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile
  1             5                  10                  15

Val Leu Leu Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile
            20                  25                  30

Ser Arg Gly Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu
            35                  40                  45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
    50              55                  60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
65                  70                  75                  80

Val Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
                85                  90                  95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
            100             105             110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
            115             120             125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
            130             135             140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
145             150             155             160
```

114

```
Val Pro Arg Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
              165                 170             175

Val Ala Glu Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe
              180             185             190

Ala Ile Gly Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly
              195             200             205

Ser Glu Pro His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
      210             215             220

Ile Glu Thr Leu Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His
225             230             235                     240

Met Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile
              245             250             255

Pro Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser
              260             265             270

Asp Gln Thr Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His
              275             280             285

Asn Cys Glu Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln
              290             295             300

Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala
305             310             315                     320

Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val
              325             330             335

Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu
              340             345             350

Asn Pro Asp Glu Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser
              355             360             365

Asn His Gly Cys Gln His Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser
      370             375             380

Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys
385             390             395                     400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu
              405             410             415
```

```
Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr
          420                 425             430

Thr Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala
          435                 440             445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser
      450                 455             460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys
465                 470                 475                 480

Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu
              485                 490                 495

Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu
          500                 505             510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser
          515                 520             525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu
      530                 535             540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp
545                 550                 555                 560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly
              565                 570                 575

Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys
          580                 585             590

Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys
          595                 600             605

Asp Val Cys Lys Ser Thr His His Gly Cys Glu His Ile Cys Val Asn
      610                 615             620

Asn Gly Asn Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe Val Leu Ala
625                 630                 635                 640

Glu Asp Gly Arg Arg Cys Lys Lys Cys Thr Glu Gly Pro Ile Asp Leu
              645                 650             655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu
          660                 665             670
```

116

```
Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr Ile Ser
    675                 680                 685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val His
    690                 695                 700

Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp Met Lys Lys
705                 710                 715                 720

Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu
                725                 730                 735

Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu Gly Ala
            740                 745                 750

Arg Pro Leu Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe Thr Asp
    755                 760                 765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala
    770                 775                 780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu
785                 790                 795                 800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His Leu Phe Tyr
                805                 810                 815

Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys Leu Lys Lys
            820                 825                 830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln Asp Ser Pro
    835                 840                 845

Ala Gly Glu Leu Pro Lys Thr Val Gln Gln Pro Thr Val Gln His Arg
    850                 855                 860

Tyr Leu Phe Glu Glu Asp Asn Leu Leu Arg Ser Thr Gln Lys Leu Ser
865                 870                 875                 880

His Ser Thr Lys Pro Ser Gly Ser Pro Leu Glu Glu Lys His Asp Gln
                885                 890                 895

Cys Lys Cys Glu Asn Leu Ile Met Phe Gln Asn Leu Ala Asn Glu Glu
            900                 905                 910

Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln Arg Met Glu
    915                 920                 925
```

117

Ala Leu Glu Asn Arg Leu Arg Tyr Arg
    930   935

<210> 76
<211> 956
<212> PRT
<213> Mus musculus

<400> 76
Met Glu Lys Met Leu Val Gly Cys Leu Leu Met Leu Gly Gln Leu Phe
  1   5   10   15

Leu Val Leu Pro Val Asp Gly Arg Glu Arg Pro Gln Ala Arg Phe Pro
              20   25   30

Ser Arg Gly Arg His Val Arg Met Tyr Pro Gln Thr Ala Leu Leu Glu
          35   40   45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
      50   55   60

Ser Arg Ser Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile
 65   70   75   80

Leu Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
              85   90   95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
          100   105   110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
          115   120   125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
      130   135   140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
145   150   155   160

Val Pro Arg Ile Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
              165   170   175

Val Ala Glu Val Ala Ala Lys Ala Arg Asn Thr Gly Ile Leu Ile Phe
              180   185   190

Ala Ile Gly Val Gly Gln Val Asp Leu Asn Thr Leu Lys Ala Ile Gly

                                118

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        195                    200                    205

Ser Glu Pro His Lys Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
    210                215                220

Ile Glu Ser Leu Thr Ser Val Phe Gln Asn Lys Leu Cys Thr Val His
225                230                235                240

Met Cys Ser Ile Leu Glu His Asn Cys Ala His Phe Cys Leu Asn Thr
            245                250                255

Pro Gly Ser Tyr Ile Cys Lys Cys Lys Gln Gly Tyr Ile Leu Ser Thr
            260                265                270

Asp Gln Lys Thr Cys Arg Ile Gln Asp Leu Cys Ala Thr Glu Asp His
            275                280                285

Gly Cys Glu Gln Leu Cys Val Asn Met Leu Gly Ser Phe Val Cys Gln
    290                295                300

Cys Tyr Ser Gly Tyr Thr Leu Ala Glu Asp Gly Lys Arg Cys Thr Ala
305                310                315                320

Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val
            325                330                335

Asn Ala Glu Ser Ser Tyr Leu Cys Arg Cys His Glu Gly Phe Ala Leu
            340                345                350

Asn Ser Asp Lys Lys Thr Cys Ser Lys Ile Asp Tyr Cys Ala Ser Ser
            355                360                365

Asn His Gly Cys Gln His Glu Cys Val Asn Ala Gln Thr Ser Ala Leu
    370                375                380

Cys Arg Cys Leu Lys Gly Phe Met Leu Asn Pro Asp Arg Lys Thr Cys
385                390                395                400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu
            405                410                415

Cys Val Asn Thr Glu Glu Gly His Tyr Cys Arg Cys Arg Gln Gly Tyr
            420                425                430

Asn Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala
    435                440                445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Glu Ser
```

```
          450                    455                    460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Asp Asp Leu Lys
465                    470                    475                    480

Thr Cys Ser Arg Ala Asp Tyr Cys Leu Leu Ser Asn His Gly Cys Glu
                 485                    490                    495

Tyr Ser Cys Val Asn Thr Asp Lys Ser Phe Ala Cys Gln Cys Pro Glu
                 500                    505                    510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser
                 515                    520                    525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu
             530                    535                    540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Asp Asp
545                    550                    555                    560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Asp Val Asn His Gly
                 565                    570                    575

Cys Glu His Leu Cys Val Asn Ser Gly Glu Ser Tyr Val Cys Lys Cys
             580                    585                    590

Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys
             595                    600                    605

Asn Val Cys Lys Ser Thr Gln His Gly Cys Glu His Met Cys Val Asn
    610                    615                    620

Asn Gly Asn Ser Tyr Leu Cys Arg Cys Ser Glu Gly Phe Val Leu Ala
625                    630                    635                    640·

Glu Asp Gly Lys His Cys Lys Arg Cys Thr Glu Gly Pro Ile Asp Leu
                 645                    650                    655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu
             660                    665                    670

Thr Val Lys His Phe Val Thr Gly Ile Ile Asp Ser Leu Ala Val Ser
             675                    680                    685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val Arg
    690                    695                    700

Thr Glu Phe Thr Leu Arg Gly Phe Ser Ser Ala Lys Glu Met Lys Lys
```

120

Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu
            725   730   735

Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Val Glu Gly Ala
            740   745   750

Arg Pro Pro Ser Thr Gln Val Pro Arg Val Ala Ile Val Phe Thr Asp
            755   760   765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala
            770   775   780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu
785   790   795   800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Ile Asp Lys His Leu Phe Tyr
            805   810   815

Ala Glu Asp Phe Ser Thr Met Gly Glu Ile Ser Glu Lys Leu Lys Glu
            820   825   830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Gly Gly Arg Gln Asp Ser Ala
            835   840   845

Ala Trp Asp Leu Pro Gln Gln Ala His Gln Pro Thr Glu Pro Glu Pro
            850   855   860

Val Thr Ile Lys Ile Lys Asp Leu Leu Ser Cys Ser Asn Phe Ala Val
865   870   875   880

Gln His Arg Phe Leu Phe Glu Glu Asp Asn Leu Ser Arg Ser Thr Gln
            885   890   895

Lys Leu Phe His Ser Thr Lys Ser Ser Gly Asn Pro Leu Glu Glu Ser
            900   905   910

Gln Asp Gln Cys Lys Cys Glu Asn Leu Ile Leu Phe Gln Asn Val Ala
            915   920   925

Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln
            930   935   940

Arg Met Glu Ala Leu Glu Asn Arg Leu Lys Tyr Arg
945   950   955

121

<210> 77
<211> 956
<212> PRT
<213> Mus musculus

<400> 77
Met Glu Lys Met Leu Val Gly Cys Leu Leu Met Leu Gly Gln Leu Phe
1   5   10   15

Leu Val Leu Pro Val Asp Gly Arg Glu Arg Pro Gln Ala Arg Phe Pro
                20   25   30

Ser Arg Gly Arg His Val Arg Met Tyr Pro Gln Thr Ala Leu Leu Glu
            35   40   45

Ser Ser Cys Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser
        50   55   60

Ser Arg Ser Val Asn Thr Tyr Asp Tyr Ala Lys Val Lys Glu Phe Ile
65   70   75   80

Leu Asp Ile Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val
                85   90   95

Gly Leu Leu Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys
            100   105   110

Thr Phe Lys Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg
            115   120   125

His Leu Ser Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu
        130   135   140

Asn Ile Ala Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn
145   150   155   160

Val Pro Arg Ile Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser
                165   170   175

Val Ala Glu Val Ala Ala Lys Ala Arg Asn Thr Gly Ile Leu Ile Phe
            180   185   190

Ala Ile Gly Val Gly Gln Val Asp Leu Asn Thr Leu Lys Ala Ile Gly
            195   200   205

Ser Glu Pro His Lys Asp His Val Phe Leu Val Ala Asn Phe Ser Gln
        210   215   220

122

Ile Glu Ser Leu Thr Ser Val Phe Gln Asn Lys Leu Cys Thr Val His
225   230   235   240

Met Cys Ser Val Leu Glu His Asn Cys Ala His Phe Cys Leu Asn Thr
                245   250   255

Pro Gly Ser Tyr Ile Cys Lys Cys Lys Gln Gly Tyr Ile Leu Ser Thr
                260   265   270

Asp Gln Lys Thr Cys Arg Ile Gln Asp Leu Cys Ala Thr Glu Asp His
        275   280   285

Gly Cys Glu Gln Leu Cys Val Asn Met Leu Gly Ser Phe Val Cys Gln
    290   295   300

Cys Tyr Ser Gly Tyr Thr Leu Ala Glu Asp Gly Lys Arg Cys Thr Ala
305   310   315   320

Met Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val
                325   330   335

Asn Ala Glu Ser Ser Tyr Leu Cys Arg Cys His Glu Gly Phe Ala Leu
                340   345   350

Asn Ser Asp Lys Lys Thr Cys Ser Lys Ile Asp Tyr Cys Ala Ser Ser
        355   360   365

Asn His Gly Cys Gln His Glu Cys Val Asn Ala Gln Thr Ser Ala Leu
    370   375   380

Cys Arg Cys Leu Lys Gly Phe Met Leu Asn Pro Asp Arg Lys Thr Cys
385   390   395   400

Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu
                405   410   415

Cys Val Asn Thr Glu Glu Gly His Tyr Cys Arg Cys Arg Gln Gly Tyr
                420   425   430

Asn Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala
        435   440   445

Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Glu Ser
    450   455   460

Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Asp Asp Leu Lys
465   470   475   480

123

```
Thr Cys Ser Arg Ala Asp Tyr Cys Leu Leu Ser Asn His Gly Cys Glu
            485             490                 495

Tyr Ser Cys Val Asn Thr Asp Lys Ser Phe Ala Cys Gln Cys Pro Glu
            500             505                 510

Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser
            515             520                 525

Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu
    530             535                 540

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Asp Asp
545             550                 555                 560

Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Asp Val Asn His Gly
            565             570                 575

Cys Glu His Leu Cys Val Asn Ser Gly Glu Ser Tyr Val Cys Lys Cys
            580             585                 590

Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys
            595             600                 605

Asn Val Cys Lys Ser Thr Gln His Gly Cys Glu His Met Cys Val Asn
            610             615                 620

Asn Gly Asn Ser Tyr Leu Cys Arg Cys Ser Glu Gly Phe Val Leu Ala
625             630                 635                 640

Glu Asp Gly Lys His Cys Lys Arg Cys Thr Glu Gly Pro Ile Asp Leu
            645             650                 655

Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu
            660             665                 670

Thr Val Lys His Phe Val Thr Gly Ile Ile Asp Ser Leu Ala Val Ser
            675             680                 685

Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val Arg
            690             695                 700

Thr Glu Phe Thr Leu Arg Gly Phe Ser Ser Ala Lys Glu Met Lys Lys
705             710                 715                 720

Ala Val Thr His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu
            725             730                 735
```

124

```
Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Val Glu Gly Ala
            740                 745                 750

Arg Pro Pro Ser Thr Gln Val Pro Arg Val Ala Ile Val Phe Thr Asp
            755                 760                 765

Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala
            770                 775                 780

Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu
785                 790                 795                 800

Glu Leu Gln Glu Ile Ala Ser Glu Pro Ile Asp Lys His Leu Phe Tyr
            805                 810                 815

Ala Glu Asp Phe Ser Thr Met Gly Glu Ile Ser Glu Lys Leu Lys Glu
            820                 825                 830

Gly Ile Cys Glu Ala Leu Glu Asp Ser Gly Gly Arg Gln Asp Ser Ala
            835                 840                 845

Ala Trp Asp Leu Pro Gln Gln Ala His Gln Pro Thr Glu Pro Glu Pro
            850                 855                 860

Val Thr Ile Lys Ile Lys Asp Leu Leu Ser Cys Ser Asn Phe Ala Val
865                 870                 875                 880

Gln His Arg Phe Leu Phe Glu Glu Asp Asn Leu Ser Arg Ser Thr Gln
            885                 890                 895

Lys Leu Phe His Ser Thr Lys Ser Ser Gly Asn Pro Leu Glu Glu Ser
            900                 905                 910

Gln Asp Gln Cys Lys Cys Glu Asn Leu Ile Leu Phe Gln Asn Val Ala
            915                 920                 925

Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln
            930                 935                 940

Arg Met Glu Ala Leu Glu Asn Arg Leu Lys Tyr Arg
945                 950                 955


<210> 78
<211> 200
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Von Willebrand
      Factor type A doman sequence

<400> 78
Asp Ile Val Phe Leu Leu Asp Gly Ser Gly Ser Ile Gly Ser Gln Asn
 1   5   10   15

Phe Glu Arg Val Lys Asp Phe Val Glu Arg Val Val Glu Arg Leu Asp
            20   25   '   30

Val Gly Pro Arg Asp Lys Lys Glu Glu Asp Ala Val Arg Val Gly Leu
        35   40   45

Val Gln Tyr Ser Asp Asn Val Arg Thr Glu Ile Lys Phe Lys Leu Asn
    50   55   60

Asp Tyr Gln Asn Lys Asp Glu Val Leu Gln Ala Leu Gln Lys Ile Arg
65   70   75   80

Tyr Glu Asp Tyr Tyr Gly Gly Gly Gly Thr Asn Thr Gly Ala Ala Leu
            85   90   95

Gln Tyr Val Val Arg Asn Leu Phe Thr Glu Ala Ser Gly Ser Arg Ile
        100   105   110

Glu Pro Val Ala Glu Glu Gly Ala Pro Lys Val Leu Val Val Leu Thr
        115   120   125

Asp Gly Arg Ser Gln Asp Asp Pro Ser Pro Thr Ile Asp Ile Arg Asp
    130   135   140

Val Leu Asn Glu Leu Lys Lys Glu Ala Gly Val Glu Val Phe Ala Ile
145   150   155   160

Gly Val Gly Asn Ala Asp Asn Asn Asn Leu Glu Glu Leu Arg Glu Ile
            165   170   175

Ala Ser Lys Pro Asp Asp His Val Phe Lys Val Ser Asp Phe Glu Ala
        180   185   190

Leu Asp Thr Leu Gln Glu Leu Leu
        195   200

<210> 79
<211> 176
<212> PRT

126

<213> Homo sapiens

<400> 79
```
Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Asn Thr His Asp
 1               5                  10                  15

Tyr Ala Lys Val Lys Glu Phe Ile Val Asp Ile Leu Gln Phe Leu Asp
             20                  25                  30

Ile Gly Pro Asp Val Thr Arg Val Gly Leu Leu Gln Tyr Gly Ser Thr
         35                  40                  45

Val Lys Asn Glu Phe Ser Leu Lys Thr Phe Lys Arg Lys Ser Glu Val
     50                  55                  60

Glu Arg Ala Val Lys Arg Met Arg His Leu Ser Thr Gly Thr Met Thr
 65                  70                  75                  80

Gly Leu Ala Ile Gln Tyr Ala Leu Asn Ile Ala Phe Ser Glu Ala Glu
             85                  90                  95.

Gly Ala Arg Pro Leu Arg Glu Asn Val Pro Arg Val Ile Met Ile Val
             100                 105                 110

Thr Asp Gly Arg Pro Gln Asp Ser Val Ala Glu Val Ala Ala Lys Ala
             115                 120                 125

Arg Asp Thr Gly Ile Leu Ile Phe Ala Ile Gly Val Gly Gln Val Asp
     130                 135                 140

Phe Asn Thr Leu Lys Ser Ile Gly Ser Glu Pro His Glu Asp His Val
145                 150                 155                 160

Phe Leu Val Ala Asn Phe Ser Gln Ile Glu Thr Leu Thr Ser Val Phe
             165                 170                 175
```

<210> 80
<211> 200
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Von Willebrand
      Factor type A doman sequence

<400> 80
Asp Ile Val Phe Leu Leu Asp Gly Ser Gly Ser Ile Gly Ser Gln Asn
  1   5   10   15

Phe Glu Arg Val Lys Asp Phe Val Glu Arg Val Val Glu Arg Leu Asp
             20   25   30

Val Gly Pro Arg Asp Lys Lys Glu Glu Asp Ala Val Arg Val Gly Leu
         35   40   45

Val Gln Tyr Ser Asp Asn Val Arg Thr Glu Ile Lys Phe Lys Leu Asn
     50   55   60

Asp Tyr Gln Asn Lys Asp Glu Val Leu Gln Ala Leu Gln Lys Ile Arg
 65   70   75   80

Tyr Glu Asp Tyr Tyr Gly Gly Gly Gly Thr Asn Thr Gly Ala Ala Leu
                 85   90   95

Gln Tyr Val Val Arg Asn Leu Phe Thr Glu Ala Ser Gly Ser Arg Ile
             100   105   110

Glu Pro Val Ala Glu Glu Gly Ala Pro Lys Val Leu Val Val Leu Thr
         115   120   125

Asp Gly Arg Ser Gln Asp Asp Pro Ser Pro Thr Ile Asp Ile Arg Asp
         130   135   140

Val Leu Asn Glu Leu Lys Lys Glu Ala Gly Val Glu Val Phe Ala Ile
145   150   155   160

Gly Val Gly Asn Ala Asp Asn Asn Asn Leu Glu Glu Leu Arg Glu Ile
                 165   170   175

Ala Ser Lys Pro Asp Asp His Val Phe Lys Val Ser Asp Phe Glu Ala
             180   185   190

Leu Asp Thr Leu Gln Glu Leu Leu
         195   200

<210> 81
<211> 176
<212> PRT
<213> Homo sapiens

<400> 81

128

```
Asp Leu Val Phe Val Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn
 1               5                  10                  15

Phe Glu Val Val Lys Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr
            20                  25                  30

Ile Ser Pro Lys Ala Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln
        35                  40                  45

Val His Thr Glu Phe Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp Met
    50                  55                  60

Lys Lys Ala Val Ala His Met Lys Tyr Met Gly Lys Gly Ser Met Thr
65                  70                  75                  80

Gly Leu Ala Leu Lys His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu
            85                  90                  95

Gly Ala Arg Pro Phe Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe
            100                 105                 110

Thr Asp Gly Arg Ala Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala
            115                 120                 125

Lys Ala Asn Gly Ile Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile
            130                 135                 140

Glu Glu Glu Leu Gln Glu Ile Ala Ser Glu Pro Thr Asn Lys His Leu
145                 150                 155                 160

Phe Tyr Ala Glu Asp Phe Ser Thr Met Asp Glu Ile Ser Glu Lys Leu
                165                 170                 175
```

<210> 82
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 82
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr

129

```
      1                5                      10                     15


   Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
               20                      25                     30


   Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
            35                     40                     45



<210> 83
<211> 36
<212> PRT
<213> Homo sapiens


<400> 83
Cys Ser Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile Pro
  1                5                      10                     15


Gly Ser Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser Asp
             20                      25                     30


Gln Thr Thr Cys
          35



<210> 84
<211> 45
<212> PRT
<213> Artificial Sequence


<220>
<223> Description of Artificial Sequence: EGF domain
      sequence


<400> 84
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
  1                5                      10                     15


Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
             20                      25                     30


Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
          35                     40                     45



<210> 85
<211> 36
<212> PRT
```

130

<213> Homo sapiens

<400> 85
Cys Ala Met Glu Asp His Asn Cys Glu Gln Leu Cys Val Asn Val Pro
  1   5   10   15

Gly Ser Phe Val Cys Gln Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp
                20   25   30

Gly Lys Arg Cys
          35

<210> 86
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 86
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
  1   5   10   15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
                20   25   30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
          35   40   45

<210> 87
<211> 36
<212> PRT
<213> Homo sapiens

<400> 87
Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val Asn Ala Asp
  1   5   10   15

Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu Asn Pro Asp
                20   25   30

Glu Lys Thr Cys
          35

131

<210> 88
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 88
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
 1   5   10   15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
             20   25   30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
         35   40   45

<210> 89
<211> 36
<212> PRT
<213> Homo sapiens

<400> 89
Cys Ala Ser Ser Asn His Gly Cys Gln Tyr Glu Cys Val Asn Thr Asp
 1   5   10   15

Asp Ser Tyr Ser Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp
             20   25   30

Lys Lys Thr Cys
         35

<210> 90
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 90
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr

132

```
      1                 5                      10                       15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
                20                    25                    30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
          35                    40                    45
```

<210> 91
<211> 81
<212> PRT
<213> Homo sapiens

<400> 91

```
Cys Ala Leu Asn Lys Pro Gly Cys Glu Cys Ala Pro Asn Asn Pro Cys
  1                 5                      10                       15

Ser Asn Gly Gly Thr Cys Val Asn Thr Pro Gly Gly Ser Ser Asp Asn
                20                    25                    30

Phe Gly Gly Tyr Thr Cys Glu Cys Pro Pro Gly Asp Tyr Tyr Leu Ser
          35                    40                    45

Tyr Thr Gly Lys Arg Cys His Glu Cys Val Asn Met Glu Glu Ser Tyr
     50                    55                    60

Tyr Cys Arg Cys His Arg Gly Tyr Thr Leu Asp Pro Asn Gly Lys Pro
 65                    70                    75                    80

Cys
```

<210> 92
<211> 81
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 92

```
Cys Ala Leu Asn Lys Pro Gly Cys Glu Cys Ala Pro Asn Asn Pro Cys
  1                 5                      10                       15

Ser Asn Gly Gly Thr Cys Val Asn Thr Pro Gly Gly Ser Ser Asp Asn
```

133

Phe Gly Gly Tyr Thr Cys Glu Cys Pro Pro Gly Asp Tyr Tyr Leu Ser
         35   40   45

Tyr Thr Gly Lys Arg Cys His Glu Cys Val Asn Met Glu Glu Ser Tyr
      50   55   60

Tyr Cys Arg Cys His Arg Gly Tyr Thr Leu Asp Pro Asn Gly Lys Pro
   65   70   75   80

Cys

<210> 93
<211> 36
<212> PRT
<213> Homo sapiens

<400> 93
Cys Ala Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu
   1   5   10   15

Asp Ser Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp
               20   25   30

Leu Lys Thr Cys
           35

<210> 94
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 94
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
   1   5   10   15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
               20   25   30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys

<210> 95
<211> 36
<212> PRT
<213> Homo sapiens

<400> 95
Cys Leu Leu Ser Asp His Gly Cys Glu Tyr Ser Cys Val Asn Met Asp
 1   5   10   15

Arg Ser Phe Ala Cys Gln Cys Pro Glu Gly His Val Leu Arg Ser Asp
            20   25   30

Gly Lys Thr Cys
        35

<210> 96
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 96
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
 1   5   10   15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
            20   25   30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
        35   40   45

<210> 97
<211> 36
<212> PRT
<213> Homo sapiens

<400> 97
Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu
 1   5   10   15

Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp
            20   25   30

Gly Lys Thr Cys
        35

<210> 98
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 98
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
 1   5   10   15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
            20   25   30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
        35   40   45

<210> 99
<211> 36
<212> PRT
<213> Homo sapiens

<400> 99
Cys Gln Ala Ile Asp His Gly Cys Glu His Ile Cys Val Asn Ser Asp
 1   5   10   15

Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly Phe Arg Leu Thr Glu Asp
            20   25   30

Gly Lys Arg Cys
        35

<210> 100
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: EGF domain
      sequence

<400> 100
Cys Ala Pro Asn Asn Pro Cys Ser Asn Gly Gly Thr Cys Val Asn Thr
 1   5   10   15

Pro Gly Gly Ser Ser Asp Asn Phe Gly Gly Tyr Thr Cys Glu Cys Pro
             20   25   30

Pro Gly Asp Tyr Tyr Leu Ser Tyr Thr Gly Lys Arg Cys
         35   40   45

<210> 101
<212> PRT
<213> Homo sapiens

<400> 101

<210> 102
<211> 464
<212> PRT
<213> Rattus norvegicus

<400> 102
Met Val Leu Ala Phe Trp Leu Ala Phe Phe Thr Tyr Thr Trp Ile Thr
 1   5   10   15

Leu Met Leu Asp Ala Ser Ala Val Lys Glu Pro His Gln Gln Cys Leu
             20   25   30

Ser Ser Pro Lys Gln Thr Arg Ile Arg Glu Thr Arg Met Arg Lys Asp
             35   40   45

Asp Leu Thr Lys Val Trp Pro Leu Lys Arg Glu Gln Leu Leu His Ile
    50   55   60

Glu Asp His Asp Phe Ser Thr Arg Pro Gly Phe Gly Gly Ser Pro Val
    65   70   75   80

Pro Val Gly Ile Asp Val Gln Val Glu Ser Ile Asp Ser Ile Ser Glu
                 85   90   95

Val Asn Met Asp Phe Thr Met Thr Phe Tyr Leu Arg His Tyr Trp Lys

137

```
                100                      105                      110

    Asp Glu Arg Leu Ser Phe Pro Ser Thr Thr Asn Lys Ser Met Thr Phe
            115                 120                 125

    Asp Arg Arg Leu Ile Gln Lys Ile Trp Val Pro Asp Ile Phe Phe Val
            130                 135                 140

    His Ser Lys Arg Ser Phe Ile His Asp Thr Thr Val Glu Asn Ile Met
    145                 150                 155                 160

    Leu Arg Val His Pro Asp Gly Asn Val Leu Phe Ser Leu Arg Ile Thr
                165                 170                 175

    Val Ser Ala Met Cys Phe Met Asp Phe Ser Arg Phe Pro Leu Asp Thr
                180                 185                 190

    Gln Asn Cys Ser Leu Glu Leu Glu Ser Tyr Ala Tyr Asn Glu Glu Asp
                195                 200                 205

    Leu Met Leu Tyr Trp Lys His Gly Asn Lys Ser Leu Asn Thr Glu Glu
            210                 215                 220

    His Ile Ser Leu Ser Gln Phe Phe Ile Glu Glu Phe Ser Ala Ser Ser
    225                 230                 235                 240

    Gly Leu Ala Phe Tyr Ser Ser Thr Gly Trp Tyr Tyr Arg Leu Phe Ile
                245                 250                 255

    Asn Phe Val Leu Arg Arg His Ile Phe Phe Phe Val Leu Gln Thr Tyr
                260                 265                 270

    Phe Pro Ala Met Leu Met Val Met Leu Ser Trp Val Ser Phe Trp Ile
                275                 280                 285

    Asp Arg Arg Ala Val Pro Ala Arg Val Ser Leu Gly Ile Thr Thr Val
            290                 295                 300

    Leu Thr Met Ser Thr Ile Val Thr Gly Val Ser Ala Ser Met Pro Gln
    305                 310                 315                 320

    Val Ser Tyr Val Lys Ala Val Asp Val Tyr Met Trp Val Ser Ser Leu
                325                 330                 335

    Phe Val Phe Leu Ser Val Ile Glu Tyr Ala Ala Val Asn Tyr Leu Thr
                340                 345                 350

    Thr Val Glu Glu Trp Lys Gln Leu Asn Arg Arg Gly Lys Ile Ser Gly
```

138

Met Tyr Asn Ile Asp Ala Val Gln Ala Met Ala Phe Asp Gly Cys Tyr
    370   375   380

His Asp Gly Glu Thr Asp Val Asp Gln Thr Ser Phe Phe Leu His Ser
385   390   395   400

Glu Glu Asp Ser Met Arg Thr Lys Phe Thr Gly Ser Pro Cys Ala Asp
                405   410   415

Ser Ser Gln Ile Lys Arg Lys Ser Leu Gly Gly Asn Val Gly Arg Ile
             420   425   430

Ile Leu Glu Asn Asn His Val Ile Asp Thr Tyr Ser Arg Ile Val Phe
         435   440   445

Pro Val Val Tyr Ile Ile Phe Asn Leu Phe Tyr Trp Gly Ile Tyr Val
    450   455   460

<210> 103
<211> 470
<212> PRT
<213> Morone americana

<400> 103
Met Arg Val Val Leu Leu Ala Leu Arg Leu Met Cys Leu Ala Trp Leu
    1   5   10   15

Trp Pro Val Thr Gln Leu Asn Ser Ser Thr Asn Lys Arg Arg His Lys
             20   25   30

Glu Leu Tyr Ile Gly Glu Asn Thr Lys Gln Lys His Gly Gly Arg Val
         35   40   45

Asp Leu Lys Leu Lys Lys Val Asp Ser Thr Lys Ser Met Leu Ile Lys
    50   55   60

Ser Glu Gln Leu Leu Arg Ile Glu Asp His Asp Phe Ala Met Arg Pro
65   70   75   80

Gly Phe Gly Gly Ser Ala Ile Pro Val Gly Ile Asp Val Gln Val Glu
             85   90   95

139

Ser Ile Asp Ser Ile Ser Glu Val Asn Met Asp Phe Thr Met Thr Leu
        100   105   110

Tyr Leu Arg His Tyr Trp Gln Asp Asp Arg Pro Ala Phe Pro Ser Ser
        115   120   125

Ser Asn Lys Ser Arg Thr Phe Asp Ala Arg Leu Val Lys Ile Trp Val
    130   135   140

Pro Asp Val Phe Phe Val His Ser Lys Arg Ser Phe Ile His Asp Thr
145   150   155   160

Thr Met Glu Asn Ile Met Leu Arg Val Tyr Pro Asp Gly Asn Ile Leu
            165   170   175

Tyr Ser Val Arg Ile Thr Val Thr Ala Leu Cys Ser Met Asp Phe Ser
        180   185   190

Ser Phe Pro Leu Asp Thr Gln Asn Cys Ser Leu Glu Leu Glu Ser Tyr
        195   200   205

Ala Tyr Ala Tyr Asn Glu Asn Asp Leu Cys Ser Thr Gly Arg Thr Gly
    210   215   220

Thr Ile Pro Leu Arg Thr Asp Glu Ile Val Leu Ser Gln Phe Phe Val
225   230   235   240

Glu Asp Phe Gln Pro Ser Phe Gly Leu Ala Phe Tyr Ser Ser Thr Gly
            245   250   255

Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Ile Leu Arg Arg His Ile Phe
        260   265   270

Phe Phe Met Leu Gln Thr Tyr Phe Pro Thr Met Leu Met Val Met Leu
        275   280   285

Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala Val Pro Ala Arg Val
    290   295   300

Ser Leu Gly Ile Thr Thr Val Leu Thr Met Ser Thr Ile Ile Thr Gly
305   310   315   320

Val Ser Ala Ser Met Pro Gln Val Ser Tyr Val Lys Ala Val Asp Ile
            325   330   335

Tyr Leu Trp Ala Ser Phe Leu Phe Val Phe Leu Ser Val Ile Glu Tyr
        340   345   350

140

Ala Ala Val Asn Tyr Phe Thr Thr Val Glu Glu Met Lys Lys Leu Lys
        355   360   365

Ser Ala Lys Ile Pro Asn Tyr Asn Ala Ser Gln Ala Met Ala Phe Asp
        370   375   380

Gly Cys Phe His Asp Asn Glu Ile Asp Leu Thr Ser Phe Pro Glu Val
385   390   395   400

Ser Ser Thr Pro Asn Thr Glu Arg Asn Thr Gln Ser Arg Asn Ser Asn
                405   410   415

Ala Ser Ala Pro Thr Glu Gly Thr Arg Leu Arg Arg Lys His Pro Leu
        420   425   430

Arg Gln Asn Leu Ser Phe Ile Met Ser Asn Ser Tyr Met Ile Asp Ser
        435   440   445

Tyr Ser Arg Val Ile Phe Pro Leu Ala Tyr Leu Leu Phe Asn Ile Ile
        450   455   460

Tyr Trp Ser Met Tyr Ala
465   470

<210> 104
<211> 473
<212> PRT
<213> Homo sapiens

<400> 104
Met Arg Phe Gly Ile Phe Leu Leu Trp Trp Gly Trp Val Leu Ala Thr
  1   5   10   15

Glu Ser Arg Met His Trp Pro Gly Arg Glu Val His Glu Met Ser Lys
                20   25   30

Lys Gly Arg Pro Gln Arg Gln Arg Arg Glu Val His Glu Asp Ala His
        35   40   45

Lys Gln Val Ser Pro Ile Leu Arg Arg Ser Pro Asp Ile Thr Lys Ser
        50   55   60

Pro Leu Thr Lys Ser Glu Gln Leu Leu Arg Ile Asp Asp His Asp Phe
  65   70   75   80

Ser Met Arg Pro Gly Phe Gly Gly Pro Ala Ile Pro Val Gly Val Asp
                85   90   95

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```
Val Gln Val Glu Ser Leu Asp Ser Ile Ser Glu Val Asp Met Asp Phe
        100                 105             110

Thr Met Thr Leu Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg Leu Ser
        115                 120             125

Phe Pro Ser Thr Asn Asn Leu Ser Met Thr Phe Asp Gly Arg Leu Val
        130                 135             140

Lys Lys Ile Trp Val Pro Asp Met Phe Phe Val His Ser Lys Arg Ser
145                 150             155                 160

Phe Ile His Asp Thr Thr Thr Asp Asn Val Met Leu Arg Val Gln Pro
            165                 170             175

Asp Gly Lys Val Leu Tyr Ser Leu Arg Val Thr Val Thr Ala Met Cys
        180                 185             190

Asn Met Asp Phe Ser Arg Phe Pro Leu Asp Thr Gln Thr Cys Ser Leu
        195                 200             205

Glu Ile Glu Ser Tyr Ala Tyr Thr Glu Asp Asp Leu Met Leu Tyr Trp
        210                 215             220

Lys Lys Gly Asn Asp Ser Leu Lys Thr Asp Glu Arg Ile Ser Leu Ser
225                 230             235                 240

Gln Phe Leu Ile Gln Glu Phe His Thr Thr Thr Lys Leu Ala Phe Tyr
            245                 250             255

Ser Ser Thr Gly Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Thr Leu Arg
        260                 265             270

Arg His Ile Phe Phe Phe Leu Leu Gln Thr Tyr Phe Pro Ala Thr Leu
        275                 280             285

Met Val Met Leu Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala Val
        290                 295             300

Pro Ala Arg Val Pro Leu Gly Ile Thr Thr Val Leu Thr Met Ser Thr
305                 310             315                 320

Ile Ile Thr Gly Val Asn Ala Ser Met Pro Arg Val Ser Tyr Ile Lys
            325                 330             335

Ala Val Asp Ile Tyr Leu Trp Val Ser Phe Val Phe Val Phe Leu Ser
            340                 345             350

                            142
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Val Leu Glu Tyr Ala Ala Val Asn Tyr Leu Thr Thr Val Gln Glu Arg
        355   360   365

Lys Glu Gln Lys Leu Arg Glu Lys Leu Pro Cys Thr Ser Gly Leu Pro
        370   375   380

Pro Pro Arg Thr Ala Met Leu Asp Gly Asn Tyr Ser Asp Gly Glu Val
385   390   395   400

Asn Asp Leu Asp Asn Tyr Met Pro Glu Asn Gly Glu Lys Pro Asp Arg
                405   410   415

Met Met Val Gln Leu Thr Leu Ala Ser Glu Arg Ser Ser Pro Gln Arg
                420   425   430

Lys Ser Gln Arg Ser Ser Tyr Val Ser Met Arg Ile Asp Thr His Ala
        435   440   445

Ile Asp Lys Tyr Ser Arg Ile Ile Phe Pro Ala Ala Tyr Ile Leu Phe
        450   455   460

Asn Leu Ile Tyr Trp Ser Ile Phe Ser
465   470

<210> 105
<211> 474
<212> PRT
<213> Rattus norvegicus

<400> 105
Met Lys Phe Gly Ile Phe Leu Leu Trp Trp Gly Trp Val Leu Ala Ala
  1   5   10   15

Glu Ser Thr Val His Trp Pro Gly Arg Glu Val His Glu Pro Ser Lys
                20   25   30

Lys Gly Ser Arg Pro Gln Arg Gln Arg Arg Gly Ala His Asp Asp Ala
        35   40   45

His Lys Gln Gly Ser Pro Ile Leu Lys Arg Ser Ser Asp Ile Thr Lys
        50   55   60

Ser Pro Leu Thr Lys Ser Glu Gln Leu Leu Arg Ile Asp Asp His Asp
  65   70   75   80

Phe Ser Met Arg Pro Gly Phe Gly Gly Pro Ala Ile Pro Val Gly Val

143

Asp Val Gln Val Glu Ser Leu Asp Ser Ile Ser Glu Val Asp Met Asp
            100   105   110

Phe Thr Met Thr Leu Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg Leu
            115   120   125

Ser Phe Pro Ser Thr Asn Asn Leu Ser Met Thr Phe Asp Gly Arg Leu
        130   135   140

Val Lys Lys Ile Trp Val Pro Asp Met Phe Phe Val His Ser Lys Arg
145   150   155   160

Ser Phe Ile His Asp Thr Thr Thr Asp Asn Val Met Leu Arg Val Gln
            165   170   175

Pro Asp Gly Lys Val Leu Tyr Ser Leu Arg Val Thr Val Thr Ala Met
            180   185   190

Cys Asn Met Asp Phe Ser Arg Phe Pro Leu Asp Thr Gln Thr Cys Ser
            195   200   205

Leu Glu Ile Glu Ser Tyr Ala Tyr Thr Glu Asp Asp Leu Met Leu Tyr
        210   215   220

Trp Lys Lys Gly Asn Asp Ser Leu Lys Thr Asp Glu Arg Ile Ser Leu
225   230   235   240

Ser Gln Phe Leu Ile Gln Glu Phe His Thr Thr Thr Lys Leu Ala Phe
            245   250   255

Tyr Ser Ser Thr Gly Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Thr Leu
            260   265   270

Arg Arg His Ile Phe Phe Phe Leu Leu Gln Thr Tyr Phe Pro Ala Thr
            275   280   285

Leu Met Val Met Leu Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala
        290   295   300

Val Pro Ala Arg Val Pro Leu Gly Ile Thr Thr Val Leu Thr Met Ser
305   310   315   320

Thr Ile Ile Thr Gly Val Asn Ala Ser Met Pro Arg Val Ser Tyr Ile
            325   330   335

Lys Ala Val Asp Ile Tyr Leu Trp Val Ser Phe Val Phe Val Phe Leu

Ser Val Leu Glu Tyr Ala Ala Val Asn Tyr Leu Thr Thr Val Gln Glu
    355   360   365

Arg Lys Glu Arg Lys Leu Arg Glu Lys Ile Ser Cys Thr Cys Gly Leu
    370   375   380

Pro Gln Pro Arg Gly Val Met Leu Asp Ser Ser Tyr Ser Asp Gly Glu
385   390   395   400

Val Asn Asp Leu Gly Gly Tyr Met Pro Glu Asn Gly Glu Lys Pro Asp
                405   410   415

Arg Met Met Val Gln Leu Thr Leu Ala Ser Glu Arg Gly Ser Pro Gln
                420   425   430

Arg Lys Ser Gln Arg Gly Ser Tyr Val Ser Met Arg Ile Asn Thr His
    435   440   445

Ala Ile Asp Lys Tyr Ser Arg Ile Ile Phe Pro Ala Ala Tyr Ile Leu
    450   455   460

Phe Asn Leu Ile Tyr Trp Ser Ile Phe Ser
465   470

<210> 106
<211> 474
<212> PRT
<213> Mus musculus

<400> 106
Met Lys Phe Gly Ile Phe Leu Leu Trp Trp Gly Trp Val Leu Ala Ala
  1   5   10   15

Glu Ser Thr Ala His Trp Pro Gly Arg Glu Val His Glu Pro Ser Arg
                20   25   30

Lys Gly Ser Arg Pro Gln Arg Gln Arg Gly Ala His Asp Asp Ala
            35   40   45

His Lys Gln Gly Ser Pro Ile Leu Arg Arg Ser Ser Asp Ile Thr Lys
    50   55   60

Ser Pro Leu Thr Lys Ser Glu Gln Leu Leu Arg Ile Asp Asp His Asp
  65   70   75   80

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Phe Ser Met Arg Pro Gly Phe Gly Gly Pro Ala Ile Pro Val Gly Val
                85                  90                  95

Asp Val Gln Val Glu Ser Leu Asp Ser Ile Ser Glu Val Asp Met Asp
                100                 105                 110

Phe Thr Met Thr Leu Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg Leu
                115                 120                 125

Ser Phe Pro Ser Ser Asn Asn Leu Ser Met Thr Phe Asp Gly Arg Leu
    130                 135                 140

Val Lys Lys Ile Trp Val Pro Asp Met Phe Phe Val His Ser Lys Arg
145                 150                 155                 160

Ser Phe Ile His Asp Thr Thr Thr Asp Asn Val Met Leu Arg Val Gln
                165                 170                 175

Pro Asp Gly Lys Val Leu Tyr Ser Leu Arg Val Thr Val Thr Ala Met
                180                 185                 190

Cys Asn Met Asp Phe Ser Arg Phe Pro Leu Asp Thr Gln Thr Cys Ser
                195                 200                 205

Leu Glu Ile Glu Ser Tyr Ala Tyr Thr Glu Asp Asp Leu Met Leu Tyr
    210                 215                 220

Trp Lys Lys Gly Asn Asp Ser Leu Lys Thr Asp Glu Arg Ile Ser Leu
225                 230                 235                 240

Ser Gln Phe Leu Ile Gln Glu Phe His Thr Thr Thr Lys Leu Ala Phe
                245                 250                 255

Tyr Ser Ser Thr Gly Trp Tyr Asn Arg Leu Tyr Ile Asn Phe Thr Leu
                260                 265                 270

Arg Arg His Ile Phe Phe Phe Leu Leu Gln Thr Tyr Phe Pro Ala Thr
                275                 280                 285

Leu Met Val Met Leu Ser Trp Val Ser Phe Trp Ile Asp Arg Arg Ala
    290                 295                 300

Val Pro Ala Arg Val Pro Leu Gly Ile Thr Thr Val Leu Thr Met Ser
305                 310                 315                 320

Thr Ile Ile Thr Gly Val Asn Ala Ser Met Pro Arg Val Ser Tyr Ile
                325                 330                 335
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146

```
Lys Ala Val Asp Ile Tyr Leu Trp Val Ser Phe Val Phe Val Phe Leu
            340                 345                 350

Ser Val Leu Glu Tyr Ala Ala Val Asn Tyr Leu Thr Thr Val Gln Glu
            355                 360                 365

Arg Lys Glu Arg Lys Leu Arg Glu Lys Ile Ser Cys Thr Cys Gly Leu
            370                 375                 380

Pro Gln Pro Arg Gly Val Met Leu Asp Ser Ser Tyr Ser Asp Gly Glu
385                     390                 395                 400

Val Asn Asp Leu Gly Gly Tyr Leu Pro Glu Asn Gly Glu Lys Pro Asp
                405                 410                 415

Arg Met Met Val Gln Leu Thr Leu Ala Ser Glu Arg Gly Ser Pro Gln
            420                 425                 430

Arg Lys Gly Gln Arg Gly Ser Tyr Val Ser Met Arg Ile Asn Thr His
            435                 440                 445

Ala Ile Asp Lys Tyr Ser Arg Ile Ile Phe Pro Ala Ala Tyr Ile Leu
            450                 455                 460

Phe Asn Leu Ile Tyr Trp Ser Ile Phe Ser
465                 470


<210> 107
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Neur_Chan_LBD
      domain sequence

<400> 107
Asp Lys Arg Val Arg Pro Val Asn Gly Gly Asp Val Pro Pro Val Thr
  1                 5                 10                  15

Val Ser Val Gly Leu Thr Leu Gln Gln Ile Ile Ser Val Asp Glu Lys
                20                  25                  30

Asn Gln Asp Leu Thr Thr Asn Val Trp Leu Arg Gln Gly Gln Trp Thr
            35                  40                  45

Asp Pro Arg Leu Ala Trp Asn Pro Ser Asp Pro Leu Asp Asp Glu Gly
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147

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                50                      55                      60

     Asp Tyr Gly Gly Ile Lys Ser Leu Arg Leu Pro Ser Asp Asp Asn His
      65                  70                  75                  80

     Asp Met Leu Asp Lys Ile
                      85



     <210> 108
     <211> 67
     <212> PRT
     <213> Homo sapiens

     <400> 108
     Asp Phe Ala Met Arg Pro Gly Phe Gly Gly Ser Pro Val Pro Val Gly
      1               5                  10                  15


     Ile Asp Val His Val Glu Ser Ile Asp Ser Ile Ser Glu Thr Asn Met
                  20                  25                  30


     Asp Phe Thr Met Thr Phe Tyr Leu Arg His Tyr Trp Lys Asp Glu Arg
              35                  40                  45


     Leu Ser Phe Pro Ser Thr Ala Asn Lys Ser Met Thr Phe Asp His Arg
          50                  55                  60


     Lys Ser Ile
      65



     <210> 109
     <211> 25
     <212> PRT
     <213> Artificial Sequence

     <220>
     <223> Description of Artificial Sequence:
           Neurotransmitter-gated ion-channel domain
           consensus pattern

     <400> 109
     Cys Xaa Leu Ile Val Met Phe Gln Xaa Leu Ile Val Met Phe Xaa Xaa
      1               5                  10                  15


     Phe Tyr Pro Xaa Asp Xaa Xaa Xaa Cys
                  20                  25
```

<210> 110
<211> 1015
<212> PRT
<213> Homo sapiens

<400> 110
Met Arg Arg Phe Leu Arg Pro Gly His Asp Pro Val Arg Glu Arg Leu
  1   5   10   15

Lys Arg Asp Leu Phe Gln Phe Asn Lys Thr Val Glu His Gly Phe Pro
              20   25   30

His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu His Ile Leu Ala
          35   40   45

Ile Gly Thr Arg Ser Gly Ala Ile Lys Leu Tyr Gly Ala Pro Gly Val
       50   55   60

Glu Phe Met Gly Leu His Gln Glu Asn Asn Ala Val Thr Gln Ile His
 65   70   75   80

Leu Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser
              85   90   95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Ala Ser Glu Leu Gln
          100   105   110

Glu Asp Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser
          115   120   125

Ala Thr Gln Ile Thr Val Val Leu Pro His Ser Ser Cys Glu Leu Leu
       130   135   140

Tyr Leu Gly Thr Glu Ser Gly Asn Val Phe Val Val Gln Leu Pro Ala
145   150   155   160

Phe Arg Ala Leu Glu Asp Arg Thr Ile Ser Ser Asp Ala Val Leu Gln
              165   170   175

Arg Leu Pro Glu Glu Ala Arg His Arg Arg Val Phe Glu Met Val Glu
              180   185   190

Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr
          195   200   205

Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu
          210   215   220

149

```
Tyr His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg
225             230             235                 240

Asp Gly Arg Leu Leu Val Ser Cys His Ser Asp Gly Ser Tyr Cys Gln
            245             250             255

Trp Pro Val Ser Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu
            260             265             270

Val Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp
            275             280             285

Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met
            290             295             300

Pro Arg Ala Ser Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp
305             310             315             320

Gly Gln Gln Thr Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Phe Thr
            325             330             335

Val Leu Thr Glu Ala Asp Pro Ala Ala Thr Phe Asp Asp Pro Tyr Ala
            340             345             350

Leu Val Val Leu Ala Glu Glu Glu Leu Val Val Ile Asp Leu Gln Thr
            355             360             365

Ala Gly Trp Pro Pro Val Gln Leu Pro Tyr Leu Ala Ser Leu His Cys
    370             375             380

Ser Ala Ile Thr Cys Ser His His Val Ser Asn Ile Pro Leu Lys Leu
385             390             395             400

Trp Glu Arg Ile Ile Ala Ala Gly Ser Arg Gln Asn Ala His Phe Ser
            405             410             415

Thr Met Glu Trp Pro Ile Asp Gly Gly Thr Ser Leu Thr Pro Ala Pro
            420             425             430

Pro Gln Arg Asp Leu Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg
            435             440             445

Phe Trp Asp Ala Ser Gly Val Cys Leu Arg Leu Leu Tyr Lys Leu Ser
    450             455             460

Thr Val Arg Val Phe Leu Thr Asp Thr Asp Pro Asn Glu Asn Phe Ser
465             470             475             480

                              150
```

```
Ala Gln Gly Glu Asp Glu Trp Pro Pro Leu Arg Lys Val Gly Ser Phe
            485                 490                 495

Asp Pro Tyr Ser Asp Asp Pro Arg Leu Gly Ile Gln Lys Ile Phe Leu
            500                 505                 510

Cys Lys Tyr Ser Gly Tyr Leu Ala Val Ala Gly Thr Ala Gly Gln Val
            515                 520                 525

Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu Gln Ala Val Glu Gln
        530                 535                 540

Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys Gly
545                 550                 555                 560

His Glu Arg Leu Ala Ala Arg Ser Gly Pro Val Arg Phe Glu Pro Gly
            565                 570                 575

Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val Thr
            580                 585                 590

Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr Ser
        595                 600                 605

His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe Val
        610                 615                 620

Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro Leu
625                 630                 635                 640

Ser Arg Val Lys Ser Leu Lys Lys Ser Leu Arg Gln Ser Phe Arg Arg
            645                 650                 655

Met Arg Arg Ser Arg Val Ser Ser Arg Lys Arg His Pro Ala Gly Pro
            660                 665                 670

Pro Gly Glu Ala Gln Glu Gly Ser Ala Lys Ala Glu Arg Pro Gly Leu
            675                 680                 685

Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile Glu Ala Arg Ser
        690                 695                 700

Ala Glu Asp Ser Phe Thr Gly Phe Val Arg Thr Leu Tyr Phe Ala Asp
705                 710                 715                 720

Thr Tyr Leu Lys Asp Ser Ser Arg His Cys Pro Ser Leu Trp Ala Gly
            725                 730                 735

                            151
```

Thr Asn Gly Gly Thr Ile Tyr Ala Phe Ser Leu Arg Val Pro Pro Ala
        740   745   750

Glu Arg Arg Met Asp Glu Pro Val Arg Ala Glu Gln Ala Lys Glu Ile
        755   760   765

Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu Val Leu Asp Gly
        770   775   780

His Ser Val Pro Leu Pro Glu Pro Leu Glu Val Ala His Asp Leu Ser
785   790   795   800

Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu Val Val Ser Glu
                805   810   815

Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys Leu Lys
        820   825   830

Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg Arg Val Ser Val
        835   840   845

Ala His Phe Gly Ser Arg Arg Ala Glu Asp Tyr Gly Glu His His Leu
        850   855   860

Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val Ser Leu Pro Leu
865   870   875   880

Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg Glu Asp Val Ser
                885   890   895

Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln Gly Phe Tyr Leu
                900   905   910

Ile Ser Pro Ser Glu Phe Glu Arg Phe Ser Leu Ser Thr Lys Trp Leu
        915   920   925

Val Glu Pro Arg Cys Leu Val Asp Ser Ala Glu Thr Lys Asn His Arg
        930   935   940

Pro Gly Asn Gly Ala Gly Pro Lys Lys Ala Pro Ser Arg Ala Arg Asn
945   950   955   960

Ser Gly Thr Gln Ser Asp Gly Glu Glu Lys Gln Pro Gly Leu Val Met
                965   970   975

Glu Arg Ala Leu Leu Ser Asp Glu Arg Ala Ala Thr Gly Val His Ile
        980   985   990

Glu Pro Pro Trp Gly Ala Ala Ser Ala Met Ala Glu Gln Ser Glu Trp
        995   1000   1005

Leu Ser Val Gln Ala Ala Arg
    1010   1015

<210> 111
<211> 1027
<212> PRT
<213> Mus musculus

<400> 111
Met Arg Arg Phe Leu Arg Thr Gly His Asp Pro Ala Arg Glu Arg Leu
  1   5   10   15

Lys Arg Asp Leu Phe Gln Phe Asn Lys Thr Val Glu His Gly Phe Pro
            20   25   30

His Gln Pro Ser Ala Leu Gly Tyr Ser Pro Ser Leu Arg Ile Leu Ala
        35   40   45

Ile Gly Thr Arg Ser Gly Ala Val Lys Leu Tyr Gly Ala Pro Gly Val
    50   55   60

Glu Phe Met Gly Leu His Lys Glu Asn Asn Ala Val Leu Gln Ile His
 65   70   75   80

Phe Leu Pro Gly Gln Cys Gln Leu Val Thr Leu Leu Asp Asp Asn Ser
            85   90   95

Leu His Leu Trp Ser Leu Lys Val Lys Gly Gly Val Ser Glu Leu Gln
            100   105   110

Glu Glu Glu Ser Phe Thr Leu Arg Gly Pro Pro Gly Ala Ala Pro Ser
        115   120   125

Ala Thr Gln Val Thr Glu Ile Leu Pro His Ser Ser Gly Glu Leu Leu
        130   135   140

Tyr Leu Gly Thr Glu Ser Gly Asn Val Leu Val Val Gln Leu Pro Gly
145   150   155   160

Phe Arg Thr Leu His Asp Arg Thr Ile Cys Ser Asp Glu Val Leu Gln
            165   170   175

Trp Leu Pro Glu Glu Ala Arg His Arg Arg Val Phe Glu Met Val Glu

153

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              180                      185                      190

Ala Leu Gln Glu His Pro Arg Asp Pro Asn Gln Ile Leu Ile Gly Tyr
        195                      200                      205

Ser Arg Gly Leu Val Val Ile Trp Asp Leu Gln Gly Ser Arg Ala Leu
        210                      215                      220

Ser His Phe Leu Ser Ser Gln Gln Leu Glu Asn Ala Ser Trp Gln Arg
225                      230                      235                      240

Asp Gly Cys Leu Ile Val Thr Cys His Ser Asp Gly Ser His Cys Gln
            245                      250                      255

Trp Pro Val Ser Ser Asp Thr Gln Asn Pro Glu Pro Leu Arg Ser Ser
            260                      265                      270

Ile Pro Tyr Gly Pro Phe Pro Cys Lys Ala Ile Thr Lys Ile Phe Trp
            275                      280                      285

Leu Thr Thr Arg Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met
            290                      295                      300

Pro Arg Ala Ser Tyr Gly Asp Arg Asn Cys Ile Ser Val Val His Asn
305                      310                      315                      320

Gly Gln Gln Thr Gly Phe Asp Phe Thr Ser Arg Val Ile Asp Phe Thr
            325                      330                      335

Val Leu Ser Glu Ala Asp Pro Ala Ala Ala Phe Asp Asp Pro Tyr Ala
            340                      345                      350

Leu Val Val Leu Ala Glu Glu Glu Leu Val Val Ile Asp Leu Gln Thr
            355                      360                      365

Pro Gly Trp Pro Pro Val Gln Leu Pro Tyr Leu Ala Ser Leu His Cys
            370                      375                      380

Ser Ala Ile Thr Cys Ser His His Val Ser Asn Ile Pro Leu Lys Leu
385                      390                      395                      400

Trp Glu Arg Ile Ile Ala Ala Gly Ser Arg Gln Asn Ser His Phe Ser
            405                      410                      415

Thr Met Glu Trp Pro Ile Asp Gly Gly Thr Ser Leu Ala Pro Pro Pro
            420                      425                      430

Pro Gln Arg Asp Leu Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg

                            154
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Phe Trp Asp Ala Ser Gly Val Cys Leu Arg Leu Leu Tyr Lys Leu Ser
    450   455   460

Thr Val Arg Val Phe Leu Thr Asp Thr Asp Pro Ser Glu Asn Leu Ser
465   470   475   480

Ala Gln Gly Glu Asp Glu Trp Pro Pro Leu Arg Lys Val Gly Ser Phe
                485   490   495

Asp Pro Tyr Ser Asp Asp Pro Arg Leu Gly Ile Gln Lys Ile Phe Leu
            500   505   510

Cys Lys Tyr Ser Gly Tyr Leu Ala Val Ala Gly Thr Ala Gly Gln Val
        515   520   525

Leu Val Leu Glu Leu Asn Asp Glu Ala Ala Glu His Ala Val Glu Gln
    530   535   540

Val Glu Ala Asp Leu Leu Gln Asp Gln Glu Gly Tyr Arg Trp Lys Gly
545   550   555   560

His Glu Arg Leu Ala Ala Arg Pro Gly Pro Val Cys Phe Glu Ala Gly
            565   570   575

Phe Gln Pro Phe Val Leu Val Gln Cys Gln Pro Pro Ala Val Val Thr
        580   585   590

Ser Leu Ala Leu His Ser Glu Trp Arg Leu Val Ala Phe Gly Thr Ser
    595   600   605

His Gly Phe Gly Leu Phe Asp His Gln Gln Arg Arg Gln Val Phe Val
    610   615   620

Lys Cys Thr Leu His Pro Ser Asp Gln Leu Ala Leu Glu Gly Pro Leu
625   630   635   640

Ser Arg Val Lys Ser Leu Lys Lys Ser Leu Arg Gln Ser Phe Arg Arg
            645   650   655

Met Arg Arg Ser Arg Val Ser Ser His Lys Arg Arg Pro Gly Gly Pro
            660   665   670

Thr Gly Glu Ala Gln Ala Gln Ala Val Asn Thr Lys Thr Glu Arg Thr
    675   680   685

Gly Leu Gln Asn Met Glu Leu Ala Pro Val Gln Arg Lys Ile Glu Ala

155

Arg Ser Ala Glu Asp Ser Phe Thr Gly Phe Val Xaa Thr Leu Tyr Xaa
705   710   715   720

Ala Asp Thr Tyr Leu Arg Asp Ser Ser Arg His Cys Pro Ser Leu Trp
                725   730   735

Ala Gly Thr Asn Gly Ser Thr Val Tyr Ala Phe Ser Leu Arg Val Pro
                740   745   750

Pro Ala Glu Lys Lys Ile Asn Lys Pro Val Arg Ala Lys Gln Ala Lys
                755   760   765

Glu Ile Gln Leu Met His Arg Ala Pro Val Val Gly Ile Leu Val Leu
                770   775   780

Asp Gly His Asn Val Pro Leu Pro Glu Pro Leu Glu Val Ala His Asp
785   790   795   800

Leu Ser Lys Ser Pro Asp Met Gln Gly Ser His Gln Leu Leu Val Val
                805   810   815

Ser Glu Glu Gln Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys
                820   825   830

Leu Lys Leu Lys Leu Thr Ala Leu Glu Gly Ser Arg Val Arg Arg Val
                835   840   845

Gly Val Ala His Phe Gly Ser Cys Arg Ala Glu Asp Tyr Gly Glu His
                850   855   860

His Leu Ala Val Leu Thr Asn Leu Gly Asp Ile Gln Val Val Ser Met
865   870   875   880

Pro Leu Leu Lys Pro Gln Val Arg Tyr Ser Cys Ile Arg Arg Glu Asp
                885   890   895

Val Ser Gly Ile Ala Ser Cys Val Phe Thr Lys Tyr Gly Gln Gly Phe
                900   905   910

Tyr Leu Ile Ser Pro Ser Glu Phe Glu Arg Phe Ser Leu Ser Thr Lys
                915   920   925

Trp Leu Val Glu Pro Arg Cys Leu Val Asp Ser Thr Lys Ala Lys Lys
                930   935   940

His Asn Arg Pro Ser Asn Gly Asn Gly Thr Gly Pro Lys Met Thr Ser

156

Ser Gly His Val Arg Asn Ser Lys Ser Gln Ser Asp Gly Asp Glu Lys
                965   970   975

Lys Pro Gly Pro Val Met Glu His Ala Leu Leu Asn Asp Ala Trp Val
            980   985   990

Leu Lys Glu Ile Gln Ser Thr Leu Glu Gly Asp Arg Arg Ser Tyr Gly
            995   1000   1005

Asn Trp His Pro His Arg Val Ala Val Gly Cys Arg Leu Ser Asn Gly
        1010   1015   1020

Glu Ala Glu
1025

<210> 112
<211> 1034
<212> PRT
<213> Mus musculus

<400> 112
Met Met Lys Phe Arg Phe Arg Arg Gln Gly Ala Asp Pro Gln Arg Glu
  1   5   10   15

Lys Leu Lys Gln Glu Leu Phe Ala Phe His Lys Thr Val Glu His Gly
            20   25   30

Phe Pro Asn Gln Pro Ser Ala Leu Ala Phe Asp Pro Glu Leu Arg Ile
            35   40   45

Met Ala Ile Gly Thr Arg Ser Gly Ala Val Lys Ile Tyr Gly Ala Pro
    50   55   60

Gly Val Glu Phe Thr Gly Leu His Arg Asp Ala Ala Thr Val Thr Gln
    65   70   75   80

Met His Phe Leu Pro Gly Gln Gly Arg Leu Leu Thr Leu Leu Asp Asp
                85   90   95

Ser Ser Leu His Leu Trp Glu Ile Ile His His Asn Gly Cys Ala His
            100   105   110

Leu Glu Glu Gly Leu Ser Phe His Pro Pro Ser Arg Pro Ser Phe Asp
            115   120   125

```
Asn Ala Ser Phe Pro Ala Ser Leu Thr Arg Val Thr Val Val Leu Leu
    130             135             140

Val Ala Gly Asn Thr Ala Ala Leu Gly Thr Glu Ser Gly Ser Ile Phe
145             150             155             160

Phe Leu Asp Val Ala Thr Leu Ala Leu Leu Glu Gly Gln Thr Leu Ser
            165             170             175

Pro Asp Val Val Leu Arg Ser Val Pro Asp Asp Tyr Arg Cys Gly Lys
            180             185             190

Ala Leu Gly Pro Val Glu Ser Leu Gln Gly His Leu Gln Asp Pro Ser
        195             200             205

Lys Ile Leu Ile Gly Tyr Ser Arg Gly Leu Leu Val Ile Trp Ser Gln
    210             215             220

Ala Thr Gln Ser Val Asp Asn Val Phe Leu Gly Asn Gln Gln Leu Glu
225             230             235             240

Ser Leu Cys Trp Gly Arg Asp Gly Ser Ser Ile Ile Ser Ser His Ser
            245             250             255

Asp Gly Ser Tyr Ala Ile Trp Ser Thr Asp Thr Gly Ser Pro Pro Thr
            260             265             270

Leu Gln Pro Thr Val Val Thr Thr Pro Tyr Gly Pro Phe Pro Cys Lys
        275             280             285

Ala Ile Asn Lys Ile Leu Trp Arg Ser Cys Glu Ser Gly Asp His Phe
    290             295             300

Ile Ile Phe Ser Gly Gly Met Pro Arg Ala Ser Tyr Gly Asp Arg His
305             310             315             320

Cys Val Ser Val Leu Arg Ala Glu Thr Leu Val Thr Leu Asp Phe Thr
            325             330             335

Ser Arg Val Ile Asp Phe Phe Thr Val His Ser Thr Gln Pro Glu Asp
            340             345             350

Glu Cys Asp Asn Pro Gln Ala Leu Ala Val Leu Leu Glu Glu Glu Leu
        355             360             365

Val Val Leu Asp Leu Gln Thr Pro Gly Trp Pro Ala Val Pro Ala Pro
    370             375             380
```

Tyr Leu Ala Pro Leu His Ser Ser Ala Ile Thr Cys Ser Ala His Val
385   390   395   400

Ala Asn Val Pro Ser Lys Leu Trp Ala Arg Ile Val Ser Ala Gly Glu
                405   410   415

Gln Gln Ser Pro Gln Pro Ala Ser Ser Ala Leu Ser Trp Pro Ile Thr
                420   425   430

Gly Gly Arg Asn Leu Ala Gln Glu Pro Ser Gln Arg Gly Leu Leu Leu
                435   440   445

Thr Gly His Glu Asp Gly Thr Val Arg Phe Trp Asp Ala Ser Gly Val
                450   455   460

Ala Leu Arg Pro Leu Tyr Lys Leu Ser Thr Ala Gly Leu Phe Gln Thr
465   470   475   480

Asp Cys Glu His Ala Asp Ser Leu Ala Gln Ala Val Glu Asp Asp Trp
                485   490   495

Pro Pro Phe Arg Lys Val Gly Cys Phe Asp Pro Tyr Ser Asp Asp Pro
                500   505   510

Arg Leu Gly Ile Gln Lys Val Ala Leu Cys Lys Tyr Thr Ala Gln Met
                515   520   525

Val Val Ala Gly Thr Ala Gly Gln Val Leu Val Leu Glu Leu Ser Glu
                530   535   540

Val Pro Ala Glu His Ala Val Ser Val Ala Asn Val Asp Leu Leu Gln
545   550   555   560

Asp Arg Glu Gly Phe Thr Trp Lys Gly His Glu Arg Leu Asn Pro His
                565   570   575

Thr Gly Leu Leu Pro Trp Pro Ala Gly Phe Gln Pro Arg Met Leu Ile
                580   585   590

Gln Cys Leu Pro Pro Ala Ala Val Thr Ala Val Thr Leu His Ala Glu
                595   600   605

Trp Ser Leu Val Ala Phe Gly Thr Ser His Gly Phe Gly Leu Phe Asp
                610   615   620

Tyr Gln Arg Lys Ser Pro Val Leu Ala Arg Cys Thr Leu His Pro Asn
625   630   635   640

159

Asp Ser Leu Ala Met Glu Gly Pro Leu Ser Arg Val Lys Ser Leu Lys
              645   650   655

Lys Ser Leu Arg Gln Ser Phe Arg Arg Ile Arg Lys Ser Arg Val Ser
              660   665   670

Gly Lys Lys Arg Thr Pro Ala Ala Ser Ser Lys Glu Ala Asn Ala Gln
          675   680   685

Leu Ala Glu Gln Thr Cys Pro His Asp Leu Glu Met Thr Pro Val Gln
    690   695   700

Arg Arg Ile Glu Pro Arg Ser Ala Asp Asp Ser Leu Ser Gly Val Val
705   710   715   720

Arg Cys Leu Tyr Phe Ala Asp Thr Phe Leu Arg Asp Ala Thr His His
              725   730   735

Gly Pro Thr Met Trp Ala Gly Thr Asn Ser Gly Ser Val Phe Ala Tyr
              740   745   750

Ala Leu Glu Val Pro Ala Ala Thr Ala Gly Gly Glu Lys Arg Pro Glu
          755   760   765

Gln Ala Val Glu Ala Val Leu Gly Lys Glu Val Gln Leu Met His Arg
    770   775   780

Ala Pro Val Val Ala Ile Ala Val Leu Asp Gly Arg Gly Arg Pro Leu
785   790   795   800

Pro Glu Pro Tyr Glu Ala Ser Arg Asp Leu Ala Gln Ala Pro Asp Met
              805   810   815

Gln Gly Gly His Ala Val Leu Ile Ala Ser Glu Glu Gln Phe Lys Val
              820   825   830

Phe Thr Leu Pro Lys Val Ser Ala Lys Thr Lys Phe Lys Leu Thr Ala
          835   840   845

His Glu Gly Cys Arg Val Arg Lys Val Ala Leu Ala Thr Phe Ala Ser
    850   855   860

Val Met Ser Glu Asp Tyr Ala Glu Thr Cys Leu Ala Cys Leu Thr Asn
865   870   875   880

Leu Gly Asp Val His Val Phe Ser Val Pro Gly Leu Arg Pro Gln Val
              885   890   895

160

His Tyr Ser Cys Ile Arg Lys Glu Asp Ile Ser Gly Ile Ala Ser Cys
          900   905   910

Val Phe Thr Arg His Gly Gln Gly Phe Tyr Leu Ile Ser Pro Ser Glu
          915   920   925

Phe Glu Arg Phe Ser Leu Ser Ala Arg Asn Ile Thr Glu Pro Leu Cys
          930   935   940

Ser Leu Asp Ile Ser Trp Pro Gln Asn Ala Thr Gln Pro Arg Leu Gln
945   950   955   960

Glu Ser Pro Lys Leu Ser Gln Ala Asn Gly Thr Arg Asp Ile Ile Leu
                965   970   975

Ala Pro Glu Ser Cys Glu Gly Ser Pro Ser Ser Ala His Ser Lys Arg
          980   985   990

Ala Asp Thr Met Glu Pro Pro Glu Ala Ala Leu Ser Pro Val Ser Ile
          995   1000   1005

Asp Ser Ala Ala Ser Gly Asp Thr Met Leu Asp Thr Thr Gly Asp Val
          1010   1015   1020

Thr Val Glu Tyr Val Lys Asp Phe Leu Gly
1025   1030

<210> 113
<211> 1057
<212> PRT
<213> Homo sapiens

<400> 113
Met Met Lys Phe Pro Phe Arg Arg Gln Gly Ala Asp Pro Gln Arg Glu
  1   5   10   15

Lys Leu Lys Gln Glu Leu Phe Ala Phe Asn Lys Thr Val Glu His Gly
                20   25   30

Phe Pro Asn Gln Pro Ser Ala Leu Ala Phe Asp Pro Glu Leu Arg Ile
          35   40   45

Met Ala Ile Gly Thr Arg Ser Gly Ala Val Lys Ile Tyr Gly Ala Pro
      50   55   60

Gly Val Glu Phe Thr Gly Leu His Arg Asp Ala Ala Thr Val Thr Gln
  65   70   75   80

161

Met His Phe Leu Thr Gly Gln Gly Arg Leu Leu Ser Leu Leu Asp Asp
                    85   90   95

Ser Ser Leu His Leu Trp Glu Ile Val His His Asn Gly Cys Ala His
                100   105   110

Leu Glu Glu Ala Leu Ser Phe Gln Leu Pro Ser Arg Pro Gly Phe Asp
        115   120   125

Gly Ala Ser Ala Pro Leu Ser Leu Thr Arg Val Thr Val Val Leu Leu
        130   135   140

Val Ala Ala Gly Asp Ile Ala Ala Leu Gly Thr Glu Gly Ser Ser Ser
145   150   155   160

Val Phe Phe Leu Asp Val Thr Thr Leu Thr Leu Leu Glu Gly Gln Thr
                165   170   175

Leu Ala Pro Gly Glu Val Leu Arg Ser Val Pro Asp Asp Tyr Arg Cys
            180   185   190

Gly Lys Asp Leu Gly Pro Val Glu Ser Leu Gln Gly His Leu Gln Asp
            195   200   205

Pro Thr Lys Ile Leu Ile Gly Tyr Ser Arg Gly Leu Leu Val Ile Arg
        210   215   220

Asn Gln Ala Ser Gln Cys Val Asp His Ile Phe Leu Gly Asn Gln Gln
225   230   235   240

Leu Glu Ser Leu Cys Trp Gly Arg Asp Ser Ser Thr Val Val Ser Ser
                245   250   255

His Ser Asp Gly Ser Tyr Ala Val Trp Ser Val Asp Ala Gly Ser Phe
            260   265   270

Pro Thr Leu Gln Pro Thr Val Ala Thr Thr Pro Tyr Gly Pro Phe Pro
        275   280   285

Cys Lys Ala Ile Asn Lys Ile Leu Trp Arg Asn Cys Glu Ser Gly Gly
        290   295   300

His Phe Ile Ile Phe Ser Gly Gly Met Pro Arg Ala Ser Tyr Gly Asp
305   310   315   320

Arg His Cys Val Ser Val Leu Arg Ala Glu Thr Leu Val Thr Leu Asp
            325   330   335

162

```
Phe His Phe Arg Ile Ile Asp Phe Phe Thr Val His Ser Thr Arg Pro
            340             345             350

Glu Asp Glu Phe Asp Asp Pro Gln Ala Leu Ala Val Leu Leu Glu Glu
            355             360             365

Glu Leu Val Val Leu Asp Leu Gln Thr Pro Gly Trp Pro Ala Val Pro
    370             375             380

Ala Pro Tyr Leu Ala Pro Leu His Ser Ser Ala Ile Thr Cys Ser Ala
385             390             395             400

His Val Ala Ser Val Pro Ala Lys Leu Trp Ala Arg Ile Val Ser Ala
            405             410             415

Gly Glu Gln Gln Ser Pro Gln Pro Val Ser Ser Ala Leu Ser Trp Pro
            420             425             430

Ile Thr Gly Gly Arg Asn Leu Ala Gln Glu Pro Ser Gln Arg Gly Leu
            435             440             445

Leu Leu Thr Gly His Glu Asp Gly Thr Val Arg Phe Trp Asp Ala Ser
    450             455             460

Gly Val Ala Leu Arg Pro Leu Tyr Lys Leu Ser Thr Ala Gly Leu Phe
465             470             475             480

Gln Thr Asp Cys Glu His Ser Asp Ser Leu Ala Gln Ala Ala Glu Asp
            485             490             495

Asp Trp Pro Pro Phe Arg Lys Val Gly Cys Phe Asp Pro Tyr Ser Asp
            500             505             510

Asp Pro Arg Leu Gly Val Gln Lys Val Ala Leu Cys Lys Tyr Thr Ala
            515             520             525

Gln Met Val Val Ala Gly Thr Ala Gly Gln Val Leu Val Leu Glu Leu
            530             535             540

Ser Asp Val Pro Val Glu His Ala Val Ser Val Ala Ile Ile Asp Leu
545             550             555             560

Leu Gln Asp Arg Glu Gly Phe Thr Trp Lys Gly His Glu Arg Leu Ser
            565             570             575

Pro Arg Thr Gly Leu Leu Pro Trp Pro Ala Gly Phe Gln Pro Cys Val
            580             585             590
```

163

Leu Val Gln Cys Leu Pro Pro Ala Ala Val Thr Ala Val Thr Leu His
        595   600   605

Thr Glu Trp Ser Leu Val Ala Phe Gly Thr Ser His Gly Phe Gly Leu
        610   615   620

Leu Ser Pro Val Leu Ala Arg Cys Thr Leu His Pro Asn Asp Ser Leu
625   630   635   640

Ala Met Glu Gly Pro Leu Ser Arg Val Lys Ser Leu Lys Lys Ser Leu
            645   650   655

Arg Gln Ser Phe Arg Arg Ile Arg Lys Ser Arg Val Ser Gly Lys Lys
            660   665   670

Arg Ala Ala Asn Ala Ser Ser Lys Leu Gln Glu Ala Asn Ala Gln Leu
            675   680   685

Ala Glu Gln Ala Cys Pro His Asp Val Glu Met Thr Pro Val Gln Arg
        690   695   700

Arg Ile Glu Pro Arg Ser Ala Asp Asp Ser Leu Ser Gly Val Val Arg
705   710   715   720

Cys Leu Tyr Phe Ala Asp Thr Phe Leu Arg Asp Gly Ala His His Gly
            725   730   735

Pro Thr Met Trp Ala Gly Thr Asn Ser Gly Ser Val Phe Ala Tyr Ala
            740   745   750

Leu Glu Val Pro Ala Ala Ala Val Gly Gly Glu Lys Arg Pro Glu Gln
        755   760   765

Ala Val Glu Ala Val Leu Gly Lys Glu Leu Gln Leu Met His Arg Ala
        770   775   780

Pro Val Val Ala Ile Ala Val Leu Asp Gly Gly Arg Pro Leu Pro Glu
785   790   795   800

Pro Tyr Glu Ala Ser Arg Asp Leu Ala Gln Ala Pro His Met Gln Gly
            805   810   815

Gly His Ala Val Leu Ile Ala Ser Glu Glu Gln Phe Lys Val Phe Thr
            820   825   830

Leu Pro Lys Val Ser Ala Lys Thr Lys Phe Lys Leu Thr Ala His Glu
        835   840   845

164

Gly Cys Arg Val Arg Lys Val Val Ala Leu Ala Thr Phe Ala Ser Val
    850   855   860

Ala Cys Glu Asp Tyr Ala Glu Thr Cys Leu Ala Cys Leu Thr Asn Leu
865   870   875   880

Gly Asp Val His Val Phe Ser Val Pro Gly Leu Arg Pro Glu Val His
                885   890   895

Tyr Ser Cys Ile Arg Lys Glu Asp Ile Ser Gly Ile Ala Ser Cys Val
            900   905   910

Phe Thr Arg His Gly Gln Gly Phe Tyr Leu Ile Ser Pro Ser Glu Phe
        915   920   925

Glu Arg Phe Ser Leu Ser Ala Arg Asn Ile Thr Glu Gly Leu Cys Ser
    930   935   940

Leu Asp Ile Asn Trp Pro Arg Asp Ala Thr Gln Ala Ser Tyr Arg Ile
945   950   955   960

Arg Glu Ser Pro Lys Leu Ser Gln Ala Asn Gly Thr Pro Ser Ile Leu
            965   970   975

Leu Ala Pro Gln Ser Leu Asp Gly Ser Pro Asp Pro Ala His Ser Met
            980   985   990

Gly Pro Asp Thr Pro Glu Pro Pro Glu Ala Ala Leu Ser Pro Met Ser
        995   1000   1005

Ile Asp Ser Ala Thr Ser Ala Asp Thr Thr Leu Asp Thr Thr Gly Asp
    1010   1015   1020

Val Thr Val Glu Asp Val Lys Asp Phe Leu Gly Ser Ser Glu Glu Ser
1025   1030   1035   1040

Glu Lys Asn Leu Arg Asn Leu Ala Glu Asp Glu Ala His Ala Cys Cys
                1045   1050   1055

Ile

<210> 114
<211> 1032
<212> PRT
<213> Homo sapiens

<400> 114

```
Met Met Lys Phe Arg Phe Arg Arg Gln Gly Ala Asp Pro Gln Arg Glu
 1               5                  10                  15

Lys Leu Lys Gln Glu Leu Phe Ala Phe Asn Lys Thr Val Glu His Gly
                20                  25                  30

Phe Pro Asn Gln Pro Ser Ala Leu Ala Phe Asp Pro Glu Leu Arg Ile
            35                  40                  45

Met Ala Ile Gly Thr Arg Ser Gly Ala Val Lys Ile Tyr Gly Ala Pro
        50                  55                  60

Gly Val Glu Phe Thr Gly Leu His Arg Asp Ala Ala Thr Val Thr Gln
65                  70                  75                  80

Met His Phe Leu Thr Gly Gln Gly Arg Leu Leu Ser Leu Leu Asp Asp
                85                  90                  95

Ser Ser Leu His Leu Trp Glu Ile Val His His Asn Gly Cys Ala His
            100                 105                 110

Leu Glu Glu Ala Leu Ser Phe Gln Leu Pro Ser Arg Pro Gly Phe Asp
        115                 120                 125

Gly Ala Ser Ala Pro Leu Ser Leu Thr Arg Val Thr Val Val Leu Leu
        130                 135                 140

Val Ala Ala Gly Asp Ile Ala Gly Leu Gly Thr Glu Gly Ser Ser Val
145                 150                 155                 160

Phe Phe Leu Asp Val Thr Thr Leu Thr Leu Leu Glu Gly Gln Thr Leu
                165                 170                 175

Ala Pro Gly Glu Val Leu Arg Ser Val Pro Asp Asp Tyr Arg Cys Gly
            180                 185                 190

Lys Ala Leu Gly Pro Val Glu Ser Leu Gln Gly His Cys Gly Thr Pro
        195                 200                 205

Gln Arg Phe Ser Leu Ala Thr Asp Arg Gly Leu Leu Val Ile Trp Asn
    210                 215                 220

Gln Ser Arg Gln Cys Val Asp His Ile Phe Leu Gly Asn Gln Gln Leu
225                 230                 235                 240

Glu Ser Leu Cys Trp Gly Arg Asp Ser Ser Thr Val Val Ser Ser His
```

166

Ser Asp Gly Ser Tyr Ala Val Trp Ser Val Asp Ala Gly Ser Phe Pro
        260   265   270

Thr Leu Gln Pro Thr Val Ala Thr Thr Pro Tyr Gly Pro Phe Pro Cys
        275   280   285

Lys Ala Ile Asn Lys Ile Leu Trp Arg Asn Cys Glu Ser Gly Gly His
        290   295   300

Phe Ile Ile Phe Ser Gly Gly Met Pro Arg Ala Ser Tyr Gly Asp Arg
305   310   315   320

His Cys Val Ser Val Leu Arg Ala Glu Thr Leu Val Thr Leu Asp Phe
                325   330   335

Thr Ser Arg Ile Ile Asp Phe Phe Thr Val His Ser Thr Arg Pro Glu
                340   345   350

Asp Glu Phe Asp Asp Pro Gln Ala Leu Ala Val Leu Leu Glu Glu Glu
                355   360   365

Leu Val Val Leu Asp Leu Gln Thr Pro Gly Trp Pro Ala Val Pro Ala
        370   375   380

Pro Tyr Leu Ala Pro Leu His Ser Ser Ala Ile Thr Cys Ser Ala Tyr
385   390   395   400

Val Ala Ser Val Pro Ala Lys Leu Trp Ala Arg Ile Val Ser Ala Gly
                405   410   415

Glu Gln Gln Ser Pro Gln Pro Val Ser Ser Ala Leu Ser Trp Pro Ile
                420   425   430

Thr Gly Gly Arg Asn Leu Ala Gln Glu Pro Ser Gln Arg Gly Leu Leu
        435   440   445

Leu Thr Gly His Glu Asp Gly Thr Val Arg Phe Trp Asp Ala Ser Gly
        450   455   460

Val Ala Leu Arg Pro Leu Tyr Lys Leu Ser Thr Ala Gly Leu Phe Gln
465   470   475   480

Thr Asp Cys Glu His Ala Asp Ser Leu Ala Gln Ala Ala Glu Asp Asp
                485   490   495

Trp Pro Pro Phe Arg Lys Val Gly Cys Phe Asp Pro Tyr Ser Asp Asp

167

Pro Arg Leu Gly Val Gln Lys Val Ala Leu Cys Lys Tyr Thr Ala Gln
    515   520   525

Met Val Val Ala Gly Thr Ala Gly Gln Val Leu Val Leu Glu Leu Ser
    530   535   540

Asp Val Pro Val Glu Gln Ala Val Ser Val Ala Ile Ile Asp Leu Leu
545   550   555   560

Gln Asp Arg Glu Gly Phe Thr Trp Lys Gly His Glu Arg Leu Ser Pro
         565   570   575

Arg Thr Gly Pro Leu Pro Trp Pro Ala Gly Phe Leu Pro Arg Val Leu
         580   585   590

Val Gln Cys Leu Pro Pro Ala Ala Val Thr Ala Val Thr Leu His Thr
         595   600   605

Glu Trp Ser Leu Val Ala Phe Gly Thr Ser His Gly Phe Gly Leu Phe
         610   615   620

Asp Tyr Gln Arg Lys Ser Pro Val Leu Ala Arg Cys Thr Leu His Pro
625   630   635   640

Asn Asp Ser Leu Ala Met Glu Gly Pro Leu Ser Arg Val Lys Ser Leu
         645   650   655

Lys Lys Ser Leu Arg Gln Ser Phe Arg Arg Ile Arg Lys Ser Arg Val
         660   665   670

Ser Gly Lys Lys Arg Ala Ala Asn Ala Ser Ser Lys Leu Leu Glu Ala
         675   680   685

Asn Ala Gln Leu Ala Glu Gln Ala Cys Pro His Asp Val Glu Met Thr
         690   695   700

Pro Val Gln Arg Arg Ile Glu Pro Arg Ser Ala Asp Asp Ser Leu Ser
705   710   715   720

Gly Val Val Arg Cys Leu Tyr Phe Ala Asp Thr Phe Leu Arg Asp Gly
         725   730   735

Pro Thr Thr Gly Pro Thr Met Trp Ala Gly Thr Asn Ser Gly Ser Val
         740   745   750

Phe Ala Tyr Ala Leu Glu Val Pro Ala Ala Ala Val Gly Gly Glu Lys

```
          755                     760                     765

Arg Pro Glu Gln Ala Val Glu Ala Val Leu Gly Lys Lys Glu Gln Leu
        770             775             780

Met His Arg Ala Pro Val Val Ala Ile Cys Arg Val Gly Arg Arg Gly
785             790             795             800

Arg Pro Leu Pro Glu Pro Tyr Glu Ala Ser Arg Asp Leu Ala Gln Ala
            805             810             815

Pro Asp Met Gln Gly Gly His Ala Val Leu Ile Ala Ser Glu Glu Gln
            820             825             830

Phe Lys Val Phe Thr Leu Pro Lys Val Ser Ala Lys Thr Lys Phe Lys
        835             840             845

Leu Thr Ala His Glu Gly Cys Arg Val Arg Lys Val Ala Leu Ala Thr
    850             855             860

Phe Cys Gln Cys Gly Leu Gln Thr Met Leu Arg Pro Ala Trp Pro Val
865             870             875             880

Leu Thr Asn Leu Gly Asp Val His Val Phe Ser Val Pro Leu Arg Pro
            885             890             895

Gln Val His Tyr Ser Cys Ile Arg Lys Glu Asp Ile Ser Gly Ile Ala
            900             905             910

Ser Cys Val Phe Thr Arg His Gly Gln Gly Phe Tyr Leu Ile Ser Pro
        915             920             925

Ser Glu Phe Glu Arg Phe Ser Leu Ser Ala Arg Asn Ile Thr Glu Arg
    930             935             940

Ser Ala Leu Trp Thr Leu Thr Gly Pro Ala Met Pro Pro Arg Pro Val
945             950             955             960

Thr Gly Ser Glu Ser His Pro Lys Leu Ser Gln Ala Asn Gly Thr Pro
            965             970             975

Ser Ile Leu Leu Ala Pro Gln Ser Leu Asp Gly Ser Pro Asp Pro Ala
            980             985             990

His Ser Met Gly Pro Asp Thr Pro Glu Pro Pro Glu Ala Ala Leu Ser
        995             1000            1005

Pro Met Ser Ile Asp Ser Ala Thr Ser Ala Asp Thr Thr Leu Thr Arg
```

Gln Gly Thr Ser Gln Trp Lys Met
1025   1030

<210> 115
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: WD domain
      sequence

<400> 115
Leu Leu Arg Thr Leu Gly His Ser Ser Ser Val Thr Ser Leu Ala Phe
  1   5   10   15

Asp Pro Asp Gly Gly Leu Leu Ala Thr Gly Ser Ala Asp Gly Thr Val
              20   25   30

Arg Ile Trp Asp
        35

<210> 116
<211> 37
<212> PRT
<213> Homo sapiens

<400> 116
Asn Lys Thr Val Glu His Gly Phe Pro His Gln Pro Ser Ala Leu Gly
  1   5   10   15

Tyr Ser Pro Ser Leu His Ile Leu Ala Ile Gly Thr Arg Ser Gly Ala
              20   25   30

Ile Lys Leu Tyr Gly
        35

<210> 117
<211> 1130
<212> PRT
<213> Homo sapiens

<400> 117

```
Gly Val Asn Ala Gln Thr Lys Asn Gly Ala Thr Pro Leu Tyr Leu Ala
 1               5                   10                  15

Cys Gln Glu Gly His Leu Glu Val Thr Gln Tyr Leu Val Gln Glu Cys
            20                  25                  30

Gly Ala Asp Pro His Ala Arg Ala His Asp Gly Met Thr Pro Leu His
            35                  40                  45

Ala Ala Ala Gln Met Gly His Ser Pro Val Ile Val Trp Leu Val Ser
        50                  55                  60

Cys Thr Asp Val Ser Leu Ser Glu Gln Asp Lys Asp Gly Ala Thr Ala
 65                 70                  75                      80

Thr His Phe Ala Ala Ser Arg Gly His Ser Lys Val Leu Ser Trp Leu
                85                  90                  95

Leu Leu His Gly Gly Glu Ile Ser Ala Asp Leu Trp Gly Gly Thr Ala
            100                 105                 110

Leu Tyr Asp Ala Ala Glu Asn Gly Glu Leu Glu Cys Cys Gln Ile Leu
        115                 120                 125

Val Val Asn Gly Ala Glu Leu Glu Val Arg Asp Arg Asp Gly Tyr Ala
    130                 135                 140

Ala Ala Asp Leu Ser Asp Phe Asn Gly His Ser His Cys Thr His Cys
145                 150                 155                 160

Leu Arg Thr Val Glu Asn Leu Ser Met Glu His Cys Val Leu Ser Arg
                165                 170                 175

Asp Pro Ser Val Glu Leu Glu Ala Lys Gln Pro Asp Ser Gly Met Ser
            180                 185                 190

Ser Pro Asn Thr Thr Val Ser Val Gln Pro Leu Asn Phe Asp Leu Ser
        195                 200                 205

Ser Pro Thr Ser Thr Leu Ser Asn Tyr Asp Ser Cys Ser Ser Ser His
    210                 215                 220

Ser Ser Ile Lys Gly Gln His Pro Pro Arg Gly Leu Ser Ser Thr Arg
225                 230                 235                 240

Ala Ala Asp Ile Gln Ser Tyr Met Asp Met Leu Asn Pro Glu Leu Gly
            245                 250                 255
```

171

Leu Pro Trp Gly Thr Ile Gly Lys Pro Ile Pro Pro Pro Pro Pro
        260   265   270

Ser Phe Pro Pro Pro Pro Pro Pro Gly Thr Gln Leu Pro Pro Pro
        275   280   285

Pro Pro Ser Tyr Pro Ser Pro Lys Pro Pro Val Gly Pro Gln Ala Ala
    290   295   300

Asp Ile Tyr Met Gln Thr Lys Asn Lys Leu Arg His Val Glu Thr Glu
305   310   315   320

Ala Leu Lys Lys Glu Pro Ser Ser Cys Asp Gly His Asp Gly Leu Arg
            325   330   335

Arg Gln Asp Ser Ser Arg Lys Pro Arg Ala Phe Ser Lys Gln Pro Ser
        340   345   350

Thr Gly Asp Tyr Tyr Arg Gln Leu Gly Arg Cys Pro Gly Glu Thr Leu
        355   360   365

Val Ala Arg Pro Gly Met Ala His Arg Glu Glu Ala Glu Leu Pro Gly
    370   375   380

Asn His Val Pro Asn Gly Cys Ala Ala Asp Pro Lys Ala Ser Arg Glu
385   390   395   400

Gln Gln Leu Pro Pro Pro Pro Pro Pro Pro Leu Pro Glu Ala Ala
            405   410   415

Ser Ser Pro Pro Pro Val Pro Pro Leu Pro Leu Glu Gly Ala Gly Pro
        420   425   430

Gly Cys Gly Gln Arg Arg Ser Ser Ser Pro Thr Gly Ser Thr Lys Ser
        435   440   445

Phe Asn Val Met Phe Pro Met Gly Asp Asn Ser Glu Leu Leu Ala Glu
    450   455   460

Ile Lys Ala Gly Lys Ser Leu Lys Pro Thr Pro Gln Ser Lys Gly Leu
465   470   475   480

Thr Thr Val Phe Ser Gly Ser Arg Gln Pro Ala Phe Gln Pro Asp Trp
            485   490   495

Pro Leu Pro Ser Val Ser Pro Ala Leu Leu Pro Val Arg Ser Pro Thr
        500   505   510

172

```
Pro Pro Ala Ala Gly Phe Gln Pro Leu Leu Asn Gly Ser Leu Val Pro
        515                 520                 525

Val Pro Pro Thr Thr Pro Ala Pro Gly Val Gln Leu Asp Val Glu Ala
        530                 535                 540

Leu Ile Pro Thr His Asp Glu Gln Gly Arg Pro Lys Pro Glu Trp Lys
545                 550                 555                     560

Arg Gln Val Met Val Gly Lys Met Gln Leu Lys Met Glu Glu Glu Glu
                565                 570                 575

Glu Gln Arg Trp Lys Gln Arg Ala Ala Thr Gly Arg Ala Pro Arg Gln
            580                 585                 590

Arg Pro Lys Trp Thr Leu Pro Arg Ala Trp Ser Gly Gly Ser Gly Arg
        595                 600                 605

Ser Leu Thr Pro Ala Ser Pro Pro Ala Gly Gln Thr Arg Ser Leu Pro
        610                 615                 620

Ala Asp Ala Ala Pro Arg Ser His Tyr Thr Thr Gln Asp Met Gln Lys
625                 630                 635                     640

Leu Thr Ala Ala Ser Ser Cys Cys Tyr Pro Arg Glu Gly Trp Arg Tyr
                645                 650                 655

Pro Arg Glu Gly Trp Arg Tyr Ser Arg Glu His Asn Ala Ile Leu Trp
            660                 665                 670

Pro Phe Gly Glu Leu Met Thr Glu Ala Asp Ile Leu Arg Ile Glu Gln
        675                 680                 685

Gln Ser Arg Thr Cys Ser Cys Arg Pro Leu Thr Arg Ala Ser Arg Trp
        690                 695                 700

Arg Arg Cys Leu Arg Arg Pro Asp Cys Arg Gly Arg Phe Ala Trp Ala
705                 710                 715                     720

Ala Arg Thr Gly Ser Thr Gly Ala Ala Arg Leu Trp Arg Ala Arg Ser
                725                 730                 735

Ser Ser Ala Ala Ser Pro Cys Ser Ile Thr Ala Pro Pro Thr Ser Cys
                740                 745                 750

Ala His Trp Thr Arg Arg Pro Arg Ala Val Arg Ala Ala Ser Pro Arg
        755                 760                 765
```

Ser Pro Leu Ala Pro Arg Ser Ala Ser Pro Ser Cys Arg Arg Thr Thr
    770   775   780

Trp Arg Pro Ala Leu Ala Ser Pro Ala Pro Pro Pro Pro Thr Ala Arg
785   790   795   800

Trp Pro Thr Gly Ser Pro Trp Thr Pro Trp Ala Arg Leu Arg His Arg
            805   810   815

Ile Ala Arg Arg Arg Tyr Leu Ser Pro Ser Ser Trp Arg Ala Gly Arg
            820   825   830

Pro Ser Ala Arg Asn Cys Ala Ala Ser Arg Thr Thr Ser Thr Cys Ala
    835   840   845

Arg Ser Ala Ser Phe Thr Ser Ser Trp Ser Thr Gly Ala Ser Gly Pro
    850   855   860

Ser Ser Asp Arg Ala Phe Arg Gly Pro Gly Ala Pro Arg Gln Thr Ala
865   870   875   880

Pro Trp Arg Asp Gly Arg Pro Cys Trp Pro Glu Leu Glu Ala Thr Asp
            885   890   895

Ala Pro Arg Leu Pro Val Ser Lys Gly Glu Ala His Ser Pro Asn Glu
            900   905   910

Arg Leu Arg Gln Leu Leu Arg Gln Arg Gln Ala Val Gly Lys Leu Leu
            915   920   925

His His Trp Arg Ser Leu Arg Arg His Val Pro Pro Ser Pro Gly Leu
    930   935   940

Ala His Gly Val Tyr Trp Pro Gln His Phe Leu Ser Pro Leu Asp Gly
945   950   955   960

Gly Ala Pro Pro Arg Tyr Glu Ser Leu Thr Leu Asp Leu Phe Met Leu
            965   970   975

Gly Tyr Phe Gln Leu Pro Glu Met Gly Leu Ser Arg Glu Asp Arg Lys
            980   985   990

Phe Arg His Leu Leu Cys Tyr Glu Met Phe His Arg Leu Asp Ser His
        995   1000   1005

Pro Trp Glu Arg Ile Arg Leu Phe His Arg Val Val Leu Glu Glu Val
    1010   1015   1020

174

Glu Ala Gly Arg Arg Gly Trp Ser Asp Gly Phe Glu Asp Leu Arg His
1025   1030   1035   1040

Arg Phe Phe Gly Asn Gly Leu Glu Ala Gly Pro Ala Pro Glu Glu Gln
               1045   1050   1055

Ala Lys Lys Lys Glu Glu Lys Gly Lys Glu Gln Glu Arg Thr Glu Glu
          1060   1065   1070

Ala Ala Pro Val Gln Lys Gly Asp Pro Pro Lys Gly Gln Arg Glu Ala
          1075   1080   1085

Leu Ala Pro Val Pro Gln Pro Pro Pro Pro Pro Ala Arg Pro Pro Ala
     1090   1095   1100

Arg Arg Ala Ser Pro Pro Arg Leu Pro Gly Ser Gln Thr Leu Arg Val
1105   1110   1115   1120

Pro Lys Pro Pro Pro Lys Thr Leu Trp Asn
               1125   1130

<210> 118
<211> 711
<212> PRT
<213> Homo sapiens

<400> 118
Met Gly Trp Leu Pro Leu Leu Leu Leu Leu Thr Gln Cys Leu Gly Val
  1   5   10   15

Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr
          20   25   30

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu
          35   40   45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met
     50   55   60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu
  65   70   75   80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly
               85   90   95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met
          100   105   110

175

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Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly
        115                 120             125

Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr
        130             135             140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro
145                 150             155                 160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val
            165             170             175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val
        180             185             190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser
        195             200             205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro
    210             215             220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys
225             230             235             240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro
            245             250             255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala
        260             265             270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly
        275             280             285

Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Thr Ala Gly Val Pro Cys
        290             295             300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu
305             310             315             320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp
            325             330             335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala
            340             345             350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln
        355             360             365

                        176
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Asp Cys Tyr His Gly Ala Gly Glu Gln Tyr Arg Gly Thr Val Ser Lys
    370   375   380

Thr Arg Lys Gly Val Gln Cys Gln Arg Trp Ser Ala Glu Thr Pro His
385   390   395   400

Lys Pro Gln Phe Thr Phe Thr Ser Glu Pro His Ala Gln Leu Glu Glu
            405   410   415

Asn Phe Cys Arg Asn Pro Asp Gly Asp Ser His Gly Pro Trp Cys Tyr
            420   425   430

Thr Met Asp Pro Arg Thr Pro Phe Asp Tyr Cys Ala Leu Arg Arg Cys
        435   440   445

Ala Asp Asp Gln Pro Pro Ser Ile Leu Asp Pro Pro Asp Gln Val Gln
    450   455   460

Phe Glu Lys Cys Gly Lys Arg Val Asp Arg Leu Asp Gln Arg Arg Ser
465   470   475   480

Lys Leu Arg Val Val Gly Gly His Pro Gly Asn Ser Pro Trp Thr Val
            485   490   495

Ser Leu Arg Asn Arg Gln Gly Gln His Phe Cys Gly Gly Ser Leu Val
        500   505   510

Lys Glu Gln Trp Ile Leu Thr Ala Arg Gln Cys Phe Ser Ser Cys His
        515   520   525

Met Pro Leu Thr Gly Tyr Glu Val Trp Leu Gly Thr Leu Phe Gln Asn
    530   535   540

Pro Gln His Gly Glu Pro Ser Leu Gln Arg Val Pro Val Ala Lys Met
545   550   555   560

Val Cys Gly Pro Ser Gly Ser Gln Leu Val Leu Leu Lys Leu Glu Arg
            565   570   575

Ser Val Thr Leu Asn Gln Arg Val Ala Leu Ile Cys Leu Pro Pro Glu
        580   585   590

Trp Tyr Val Val Pro Pro Gly Thr Lys Cys Glu Ile Ala Gly Trp Gly
        595   600   605

Glu Thr Lys Gly Thr Gly Asn Asp Thr Val Leu Asn Val Ala Phe Leu
    610   615   620

177

Asn Val Ile Ser Asn Gln Glu Cys Asn Ile Lys His Arg Gly Arg Val
625   630   635   640

Arg Glu Ser Glu Met Cys Thr Glu Gly Leu Leu Ala Pro Val Gly Ala
                    645   650   655

Cys Glu Gly Asp Tyr Gly Gly Pro Leu Ala Cys Phe Thr His Asn Cys
                660   665   670

Trp Val Leu Glu Gly Ile Ile Ile Pro Asn Arg Val Cys Ala Arg Ser
            675   680   685

Arg Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val Asp Trp Ile
        690   695   700

His Lys Val Met Arg Leu Gly
705   710

<210> 119
<211> 711
<212> PRT
<213> Homo sapiens

<400> 119
Met Gly Trp Leu Pro Leu Leu Leu Leu Leu Thr Gln Cys Leu Gly Val
    1   5   10   15

Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr
                20   25   30

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu
            35   40   45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met
        50   55   60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu
65   70   75   80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly
                85   90   95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met
                100   105   110

Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly

178

Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr
    130   135   140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro
145   150   155   160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val
                165   170   175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val
                180   185   190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser
                195   200   205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro
    210   215   220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys
225   230   235   240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro
                245   250   255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala
                260   265   270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly
                275   280   285

Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Thr Ala Gly Val Pro Cys
    290   295   300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu
305   310   315   320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp
                325   330   335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala
                340   345   350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln
    355   360   365

Asp Cys Tyr His Gly Ala Gly Glu Gln Tyr Arg Gly Thr Val Ser Lys

179

Thr Arg Lys Gly Val Gln Cys Gln Arg Trp Ser Ala Glu Thr Pro His
385   390   395   400

Lys Pro Gln Phe Thr Phe Thr Ser Glu Pro His Ala Gln Leu Glu Glu
               405   410   415

Asn Phe Cys Arg Asn Pro Asp Gly Asp Ser His Gly Pro Trp Cys Tyr
           420   425   430

Thr Met Asp Pro Arg Thr Pro Phe Asp Tyr Cys Ala Leu Arg Arg Cys
       435   440   445

Ala Asp Asp Gln Pro Pro Ser Ile Leu Asp Pro Pro Asp Gln Val Gln
   450   455   460

Phe Glu Lys Cys Gly Lys Arg Val Asp Arg Leu Asp Gln Arg Arg Ser
465   470   475   480

Lys Leu Arg Val Val Gly Gly His Pro Gly Asn Ser Pro Trp Thr Val
           485   490   495

Ser Leu Arg Asn Arg Gln Gly Gln His Phe Cys Gly Gly Ser Leu Val
           500   505   510

Lys Glu Gln Trp Ile Leu Thr Ala Arg Gln Cys Phe Ser Ser Cys His
       515   520   525

Met Pro Leu Thr Gly Tyr Glu Val Trp Leu Gly Thr Leu Phe Gln Asn
   530   535   540

Pro Gln His Gly Glu Pro Ser Leu Gln Arg Val Pro Val Ala Lys Met
545   550   555   560

Val Cys Gly Pro Ser Gly Ser Gln Leu Val Leu Leu Lys Leu Glu Arg
           565   570   575

Ser Val Thr Leu Asn Gln Arg Val Ala Leu Ile Cys Leu Pro Pro Glu
           580   585   590

Trp Tyr Val Val Pro Pro Gly Thr Lys Cys Glu Ile Ala Gly Trp Gly
       595   600   605

Glu Thr Lys Gly Thr Gly Asn Asp Thr Val Leu Asn Val Ala Leu Leu
   610   615   620

Asn Val Ile Ser Asn Gln Glu Cys Asn Ile Lys His Arg Gly Arg Val

180

Arg Glu Ser Glu Met Cys Thr Glu Gly Leu Leu Ala Pro Val Gly Ala
                645   650   655

Cys Glu Gly Asp Tyr Gly Gly Pro Leu Ala Cys Phe Thr His Asn Cys
            660   665   670

Trp Val Leu Glu Gly Ile Ile Ile Pro Asn Arg Val Cys Ala Arg Ser
        675   680   685

Arg Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val Asp Trp Ile
    690   695   700

His Lys Val Met Arg Leu Gly
705   710

<210> 120
<211> 711
<212> PRT
<213> Homo sapiens

<400> 120
Met Gly Trp Leu Pro Leu Leu Leu Leu Leu Thr Gln Tyr Leu Gly Val
  1   5   10   15

Pro Gly Gln Arg Ser Pro Leu Asn Asp Phe Gln Val Leu Arg Gly Thr
                20   25   30

Glu Leu Gln His Leu Leu His Ala Val Val Pro Gly Pro Trp Gln Glu
            35   40   45

Asp Val Ala Asp Ala Glu Glu Cys Ala Gly Arg Cys Gly Pro Leu Met
        50   55   60

Asp Cys Arg Ala Phe His Tyr Asn Val Ser Ser His Gly Cys Gln Leu
 65   70   75   80

Leu Pro Trp Thr Gln His Ser Pro His Thr Arg Leu Arg Arg Ser Gly
                85   90   95

Arg Cys Asp Leu Phe Gln Lys Lys Asp Tyr Val Arg Thr Cys Ile Met
            100   105   110

Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr Val Gly Gly
            115   120   125

```
Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp His Lys Tyr
    130             135             140

Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys Arg Asn Pro
145             150             155             160

Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp Pro Ala Val
            165             170             175

Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys Arg Glu Ala Ala Cys Val
            180             185             190

Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr Glu Ser
            195             200             205

Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln His Pro
    210             215             220

Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn Tyr Cys
225             230             235             240

Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr Asp Pro
            245             250             255

Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser Glu Ala
            260             265             270

Gln Pro Arg Gln Glu Ala Thr Thr Val Ser Cys Phe Arg Gly Lys Gly
    275             280             285

Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr Thr Ala Gly Val Pro Cys
    290             295             300

Gln Arg Trp Asp Ala Gln Ile Pro His Gln His Arg Phe Thr Pro Glu
305             310             315             320

Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn Phe Cys Arg Asn Pro Asp
            325             330             335

Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu Arg Pro Gly Met Arg Ala
            340             345             350

Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr Asp Asp Val Arg Pro Gln
            355             360             365

Asp Cys Tyr His Gly Ala Gly Glu Gln Tyr Arg Gly Thr Val Ser Lys
    370             375             380
```

182

Thr Arg Lys Gly Val Gln Cys Gln Arg Trp Ser Ala Glu Thr Pro His
385   390   395   400

Lys Pro Gln Phe Thr Phe Thr Ser Glu Pro His Ala Gln Leu Glu Glu
            405   410   415

Asn Phe Cys Arg Asn Pro Asp Gly Asp Ser His Gly Pro Trp Cys Tyr
            420   425   430

Thr Met Asp Pro Arg Thr Pro Phe Asp Tyr Cys Ala Leu Arg Arg Cys
            435   440   445

Ala Asp Asp Gln Pro Pro Ser Ile Leu Asp Pro Pro Asp Gln Val Gln
            450   455   460

Phe Glu Lys Cys Gly Lys Arg Val Asp Arg Leu Asp Gln Arg Arg Ser
465   470   475   480

Lys Leu Arg Val Val Gly Gly His Pro Gly Asn Ser Pro Trp Thr Val
            485   490   495

Ser Leu Arg Asn Arg Gln Gly Gln His Phe Cys Gly Gly Ser Leu Val
            500   505   510

Lys Glu Gln Trp Ile Leu Thr Ala Arg Gln Cys Phe Ser Ser Cys His
            515   520   525

Met Pro Leu Thr Gly Tyr Glu Val Trp Leu Gly Thr Leu Phe Gln Asn
            530   535   540

Pro Gln His Gly Glu Pro Ser Leu Gln Arg Val Pro Val Ala Lys Met
545   550   555   560

Val Cys Gly Pro Ser Gly Ser Gln Leu Val Leu Leu Lys Leu Glu Arg
            565   570   575

Ser Val Thr Leu Asn Gln Arg Val Ala Leu Ile Cys Leu Pro Pro Glu
            580   585   590

Trp Tyr Val Val Pro Pro Gly Thr Lys Cys Glu Ile Ala Gly Trp Gly
            595   600   605

Glu Thr Lys Gly Thr Gly Asn Asp Thr Val Leu Asn Val Ala Leu Leu
            610   615   620

Asn Val Ile Ser Asn Gln Glu Cys Asn Ile Lys His Arg Gly Arg Val
625   630   635   640

183

Arg Glu Ser Glu Met Cys Thr Glu Gly Leu Leu Ala Pro Val Gly Ala
            645   650   655

Cys Glu Gly Asp Tyr Gly Gly Pro Leu Ala Cys Phe Thr His Asn Cys
            660   665   670

Trp Val Leu Glu Gly Ile Ile Ile Pro Asn Arg Val Cys Ala Arg Ser
            675   680   685

Arg Trp Pro Ala Val Phe Thr Arg Val Ser Val Phe Val Asp Trp Ile
    690   695   700

His Lys Val Met Arg Leu Gly
705   710

<210> 121
<211> 567
<212> PRT
<213> Homo sapiens

<400> 121
Met Thr Ser Arg Cys Ser Gly Ala Gln Ser Tyr Leu Leu His Ala Val
    1   5   10   15

Val Pro Gly Pro Trp Gln Glu Asp Val Ala Asp Ala Glu Glu Cys Ala
            20   25   30

Gly Arg Cys Gly Leu Leu Met Asp Cys Trp Ala Phe His Tyr Asn Val
            35   40   45

Ser Ser His Gly Cys Gln Leu Leu Pro Trp Thr Gln His Ser Pro His
    50   55   60

Ser Arg Leu Arg His Ser Gly Arg Cys Asp Leu Phe Gln Lys Lys Asp
65   70   75   80

Tyr Ile Arg Thr Cys Ile Met Asn Asn Gly Val Gly Tyr Arg Asp Thr
                85   90   95

Met Ala Thr Thr Val Gly Gly Leu Ser Cys Gln Ala Trp Ser His Lys
            100   105   110

Phe Pro Asn Asp His Gln Tyr Met Pro Thr Leu Arg Asn Gly Leu Glu
            115   120   125

Glu Asn Phe Cys Arg Asn Pro Asp Gly Asp Pro Gly Gly Pro Trp Cys
            130   135   140

184

His Thr Thr Asp Pro Ala Val Arg Phe Gln Ser Cys Gly Ile Lys Ser
145   150   155   160

Cys Leu Val Ala Ala Cys Val Trp Cys Asn Gly Glu Glu Tyr Arg Gly
                165   170   175

Ala Val Asp Arg Thr Glu Ser Gly Arg Glu Cys Gln Arg Trp Asp Leu
                180   185   190

Gln His Pro His Gln His Pro Phe Glu Pro Gly Lys Phe Leu Asp Gln
                195   200   205

Gly Leu Asp Asp Asn Tyr Cys Arg Ser Pro Asp Gly Ser Gln Arg Pro
        210   215   220

Trp Cys Tyr Thr Thr Asp Pro Gln Ile Glu Arg Glu Phe Cys Asp Leu
225   230   235   240

Pro Arg Cys Gly Ser Glu Ala Gln Pro Arg Gln Glu Ala Thr Ser Val
                245   250   255

Ser Cys Phe Arg Gly Lys Gly Glu Gly Tyr Arg Gly Thr Ala Asn Thr
                260   265   270

Thr Thr Ala Gly Val Pro Cys Gln Arg Trp Asp Ala Gln Ile Pro His
        275   280   285

Gln His Arg Phe Thr Pro Glu Lys Tyr Ala Cys Lys Asp Leu Arg Glu
        290   295   300

Asn Phe Cys Arg Asn Pro Asp Gly Ser Glu Ala Pro Trp Cys Phe Thr
305   310   315   320

Leu Arg Pro Gly Thr Arg Val Gly Phe Cys Tyr Gln Ile Arg Arg Cys
                325   330   335

Thr Asp Asp Val Arg Pro Gln Asp Cys Tyr His Gly Ala Gly Glu Gln
                340   345   350

Tyr Arg Gly Thr Val Ser Lys Thr Arg Lys Gly Val Gln Cys Gln Arg
                355   360   365

Trp Ser Ala Glu Thr Pro His Lys Pro Gln Phe Thr Phe Thr Ser Glu
        370   375   380

Pro His Ala Gln Leu Glu Glu Asn Phe Cys Gln Asn Pro Asp Gly Asp
385   390   395   400

185

```
Ser His Gly Pro Trp Cys Tyr Thr Met Asp Pro Arg Thr Pro Phe Asp
                405                 410                 415

Tyr Cys Ala Leu Arg Arg Cys Ala Asp Asp Gln Pro Pro Ser Ile Leu
            420                 425                 430

Asp Pro Pro Asp Gln Val Gln Phe Glu Lys Cys Gly Lys Arg Val Asp
            435                 440                 445

Arg Leu Asp Gln Arg Arg Ser Lys Leu Arg Val Ala Gly Gly His Pro
        450                 455                 460

Gly Asn Ser Pro Trp Thr Val Ser Leu Gly Asn Arg Gln Gly Gln His
465                 470                 475                 480

Phe Cys Gly Gly Ser Leu Val Lys Glu Gln Trp Ile Leu Thr Ala Arg
            485                 490                 495

Gln Cys Phe Ser Ser Cys His Met Pro Leu Thr Gly Tyr Glu Val Trp
            500                 505                 510

Leu Gly Thr Leu Phe Gln Asn Pro Gln His Gly Glu Pro Gly Leu Gln
            515                 520                 525

Arg Val Pro Val Ala Lys Met Leu Cys Gly Pro Ser Gly Ser Gln Leu
        530                 535                 540

Val Leu Leu Lys Leu Glu Arg Ser Val Thr Leu Asn Gln Arg Val Ala
545                 550                 555                 560

Leu Ile Cys Leu Pro Pro Glu
                565


<210> 122
<211> 78
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kringle domain
      sequence

<400> 122
Cys Val Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr
  1                 5                  10                 15
```

186

```
Glu Ser Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln
            20                  25                  30

His Pro Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn
            35                  40                  45

Tyr Cys Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr
        50                  55                  60

Asp Pro Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys
    65                  70                  75
```

```
<210> 123
<211> 79
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kringle domain
      sequence

<400> 123
```

```
Cys Phe Arg Gly Lys Gly Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr
 1               5                  10                  15

Thr Ala Gly Val Pro Cys Gln Arg Trp Asp Ala Gln Ile Pro His Gln
            20                  25                  30

His Arg Phe Thr Pro Glu Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn
            35                  40                  45

Phe Cys Arg Asn Pro Asp Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu
        50                  55                  60

Arg Pro Gly Met Arg Ala Ala Phe Cys Tyr Gln Ile Arg Arg Cys
    65                  70                  75
```

```
<210> 124
<211> 77
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kringle domain
      sequence
```

<400> 124

Cys Ile Met Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala Thr Thr
 1   5   10   15

Val Gly Gly Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro Asn Asp
            20   25   30

His Lys Tyr Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn Phe Cys
        35   40   45

Arg Asn Pro Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr Thr Asp
    50   55   60

Pro Ala Val Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys
65   70   75

<210> 125
<211> 80
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kringle domain
      sequence

<400> 125

Cys Val Trp Cys Asn Gly Glu Glu Tyr Arg Gly Ala Val Asp Arg Thr
 1   5   10   15

Glu Ser Gly Arg Glu Cys Gln Arg Trp Asp Leu Gln His Pro His Gln
            20   25   30

His Pro Phe Glu Pro Gly Lys Phe Leu Asp Gln Gly Leu Asp Asp Asn
        35   40   45

Tyr Cys Arg Asn Pro Asp Gly Ser Glu Arg Pro Trp Cys Tyr Thr Thr
    50   55   60

Asp Pro Gln Ile Glu Arg Glu Phe Cys Asp Leu Pro Arg Cys Gly Ser
65   70   75   80

<210> 126
<211> 79

188

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kringle domain
    sequence

<400> 126
Arg Thr Cys Ile Met Asn Asn Gly Val Gly Tyr Arg Gly Thr Met Ala
 1   5   10   15

Thr Thr Val Gly Gly Leu Pro Cys Gln Ala Trp Ser His Lys Phe Pro
            20   25   30

Asn Asp His Lys Tyr Thr Pro Thr Leu Arg Asn Gly Leu Glu Glu Asn
        35   40   45

Phe Cys Arg Asn Pro Asp Gly Asp Pro Gly Gly Pro Trp Cys Tyr Thr
    50   55   60

Thr Asp Pro Ala Val Arg Phe Gln Ser Cys Gly Ile Lys Ser Cys
 65   70   75

<210> 127
<211> 81
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Kringle domain
    sequence

<400> 127
Cys Phe Arg Gly Lys Gly Glu Gly Tyr Arg Gly Thr Ala Asn Thr Thr
 1   5   10   15

Thr Ala Gly Val Pro Cys Gln Arg Trp Asp Ala Gln Ile Pro His Gln
            20   25   30

His Arg Phe Thr Pro Glu Lys Tyr Ala Cys Lys Asp Leu Arg Glu Asn
        35   40   45

Phe Cys Arg Asn Pro Asp Gly Ser Glu Ala Pro Trp Cys Phe Thr Leu
    50   55   60

Arg Pro Gly Met Arg Ala Ala Phe Cys Tyr Gln Ile Arg Arg Cys Thr
 65   70   75   80

Asp

<210> 128
<211> 80
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Apple domain
      sequence

<400> 128
Asp Phe Gln Val Leu Arg Gly Thr Glu Leu Gln His Leu Leu His Ala
 1   5   10   15

Val Val Pro Gly Pro Trp Gln Glu Asp Val Ala Asp Ala Glu Glu Cys
             20   25   30

Ala Gly Arg Cys Gly Pro Leu Met Asp Cys Arg Ala Phe His Tyr Asn
         35   40   45

Val Ser Ser His Gly Cys Gln Leu Leu Pro Trp Thr Gln His Ser Pro
     50   55   60

His Thr Arg Leu Arg Arg Ser Gly Arg Cys Asp Leu Phe Gln Lys Lys
65   70   75   80

<210> 129
<211> 431
<212> PRT
<213> Mus musculus

<400> 129
Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Thr Leu Pro Ser
 1   5   10   15

Leu Gly Ala Gly Gly Glu Ser Pro Glu Ala Pro Pro Gln Ser Trp Thr
             20   25   30

Gln Leu Trp Leu Phe Arg Phe Leu Leu Asn Val Ala Gly Tyr Ala Ser
         35   40   45

190

```
Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Leu Arg Arg Lys Asn
    50                  55                  60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
65                  70                  75                      80

Val Phe Gly Asn Glu Pro Lys Ala Pro Asp Glu Val Leu Leu Ala Pro
                85                  90                      95

Arg Thr Glu Thr Ala Glu Ser Thr Pro Ser Trp Gln Val Leu Lys Leu
            100                 105                 110

Val Phe Cys Ala Ser Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Ile
            115                 120                 125

Leu Gln Glu Arg Val Met Thr Gly Ser Tyr Gly Ala Thr Ala Thr Ser
    130                 135                 140

Pro Gly Glu His Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
145                 150                 155                 160

Val Leu Ala Leu Val Val Ala Gly Leu Tyr Cys Val Leu Arg Lys Gln
            165                 170                 175

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
            180                 185                 190

Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
        195                 200                 205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
    210                 215                 220

Met Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr
225                 230                 235                 240

Leu Thr Ala Gly Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser
            245                 250                 255

Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
            260                 265                 270

Val Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp
    275                 280                 285

Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe
    290                 295                 300
```

191

Gly Val Asn Leu Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu
305   310   315   320

Gln Gly Ala Leu Leu Glu Gly Ala Arg Phe Met Gly Arg His Ser Glu
                325   330   335

Phe Ala Leu His Ala Leu Leu Leu Ser Ile Cys Ser Ala Phe Gly Gln
            340   345   350

Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr
            355   360   365

Ile Ile Met Thr Leu Arg Gln Ala Ile Ala Ile Leu Leu Ser Cys Leu
    370   375   380

Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val
385   390   395   400

Val Phe Thr Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Lys Gln
            405   410   415

Arg Gly Lys Lys Ala Val Pro Thr Glu Pro Pro Val Gln Lys Val
            420   425   430

<210> 130
<211> 465
<212> PRT
<213> Drosophila melanogaster

<400> 130
Met Tyr Ala Tyr Asn Lys Met Gly Arg Val Pro Glu Leu Val Ile Cys
  1   5   10   15

Ser Phe Ile Val Val Thr Leu Leu Val Ile His Phe Phe Ser Asp Leu
                20   25   30

Leu Arg Ala Ser Leu Gly Gly Tyr Tyr Asn Gln Asp Val Thr Leu Ser
            35   40   45

Gln Leu Val Glu Ser Gln Asn Ser Asp Tyr Ala Trp Phe Leu Lys Leu
        50   55   60

Leu Val Asn Cys Phe Gly Tyr Ser Cys Val Phe Val Pro Gly Phe Leu
 65   70   75   80

Ile Tyr Lys Tyr Val Gly Arg Ile Asn Tyr Leu Glu Arg Gly Asn Lys

192

```
              85                    90                    95

Thr Phe Leu His Lys Ala Ile Asn Met Cys Ile Thr Gly Asn Ser Gly
            100                 105                 110

Tyr Asp Gln Leu Asp Ala Gly Thr Ser Thr Ala Asp Lys Asp Arg Pro
            115                 120                 125

Ala Ala Ser Thr Ala Pro Lys Arg Thr Ser Ser Gln Glu Ala Val Gln
    130                 135                 140

Leu Leu Trp Cys Phe Gly Gly Leu Met Ile Ser Tyr Leu Thr Trp Gly
145                 150                 155                 160

Val Leu Gln Glu Lys Ile Met Thr Gln Asn Tyr Leu Asn Phe Thr Gly
            165                 170                 175

Glu Ser Ala Lys Phe Lys Asp Ser Gln Phe Leu Val Phe Ser Asn Arg
            180                 185                 190

Leu Leu Ala Phe Leu Val Ala Leu Ala Tyr Leu Gln Trp Gln Pro Ser
    195                 200                 205

Pro Val Arg His Arg Ala Pro Leu Tyr Lys Tyr Ser Tyr Ala Ser Phe
    210                 215                 220

Ser Asn Ile Met Ser Ala Trp Phe Gln Tyr Glu Ala Leu Lys Phe Val
225                 230                 235                 240

Asn Phe Pro Thr Gln Val Leu Ala Lys Ser Cys Lys Ile Ile Pro Val
            245                 250                 255

Met Leu Met Gly Lys Ile Met Ser Lys Ala Lys Tyr Glu Ser Tyr Glu
            260                 265                 270

Tyr Val Thr Ala Leu Leu Ile Ser Leu Gly Met Ile Phe Phe Met Ser
    275                 280                 285

Gly Ser Ser Asp Ser Ser Lys Ala Ser Gly Val Thr Thr Leu Thr Gly
    290                 295                 300

Ile Phe Leu Leu Ser Met Tyr Met Val Phe Asp Ser Phe Thr Ala Asn
305                 310                 315                 320

Trp Gln Gly Ser Leu Phe Lys Ser Tyr Gly Met Thr Pro Leu Gln Met
            325                 330                 335

Met Cys Gly Val Asn Leu Phe Ser Ser Ile Phe Thr Gly Ala Ser Leu
```

Ser Met Gln Gly Gly Phe Met Asp Ser Leu Ala Phe Ala Thr Glu His
        355   360   365

Pro Lys Phe Val Phe Asp Met Val Val Leu Ser Val Cys Ser Ala Val
    370   375   380

Gly Gln Leu Phe Ile Tyr His Thr Ile Asp Val Phe Gly Pro Val Val
385   390   395   400

Phe Thr Ile Ile Met Thr Leu Arg Gln Ala Val Ala Ile Met Leu Ser
            405   410   415

Cys Phe Ile Tyr Gln His Ser Ile Ser Leu Leu Gly Ile Phe Gly Val
        420   425   430

Leu Ile Val Phe Val Ala Ile Phe Leu Arg Val Tyr Cys Thr Gln Arg
    435   440   445

Leu Arg Ala Ile Arg Lys Arg Ala Glu Ala Asn Lys Pro Lys Met Ala
    450   455   460

Val
465

<210> 131
<211> 465
<212> PRT
<213> Drosophila melanogaster

<400> 131
Met Tyr Ala Tyr Asn Lys Met Gly Arg Val Pro Glu Leu Val Ile Cys
  1   5   10   15

Ser Phe Ile Val Val Ser Leu Leu Val Ile His Phe Phe Ser Asp Leu
            20   25   30

Leu Arg Ala Ser Leu Gly Gly Tyr Tyr Asn Gln Asp Val Thr Leu Ser
        35   40   45

Gln Leu Val Glu Ser Gln Asn Ser Asp Tyr Ala Trp Phe Leu Lys Leu
    50   55   60

Leu Val Asn Cys Phe Gly Tyr Ser Cys Val Phe Val Pro Gly Phe Leu
65   70   75   80

```
Ile Tyr Lys Tyr Val Gly Arg Ile Asn Tyr Leu Glu Arg Gly Asn Lys
            85                  90                      95

Thr Phe Leu His Lys Ala Ile Asn Met Cys Ile Thr Gly Asn Ser Gly
            100                 105                 110

Tyr Asp Gln Leu Asp Ala Gly Thr Ser Thr Ala Asp Lys Asp Arg Pro
        115                 120                 125

Ala Ala Ser Thr Ala Pro Lys Arg Thr Ser Ser Gln Glu Ala Val Gln
    130                 135                 140

Leu Leu Trp Cys Phe Gly Gly Leu Met Ile Ser Tyr Leu Thr Trp Gly
145                 150                 155                 160

Val Leu Gln Glu Lys Ile Met Thr Gln Asn Tyr Leu Asn Phe Thr Gly
            165                 170                 175

Glu Ser Ala Lys Phe Lys Asp Ser Gln Phe Leu Val Phe Ser Asn Arg
            180                 185                 190

Leu Leu Ala Phe Leu Val Ala Leu Ala Tyr Leu Gln Trp Gln Pro Ser
        195                 200                 205

Pro Val Arg His Arg Ala Pro Leu Tyr Lys Tyr Ser Tyr Ala Ser Phe
    210                 215                 220

Ser Asn Ile Met Ser Ala Trp Phe Gln Tyr Glu Ala Leu Lys Phe Val
225                 230                 235                 240

Asn Phe Pro Thr Gln Val Leu Ala Lys Ser Cys Lys Ile Ile Pro Val
            245                 250                 255

Met Leu Met Gly Lys Ile Met Ser Lys Ala Lys Tyr Glu Ser Tyr Glu
            260                 265                 270

Tyr Val Thr Ala Leu Leu Ile Ser Leu Gly Met Ile Phe Phe Met Ser
        275                 280                 285

Gly Ser Ser Asp Ser Ser Lys Ala Ser Gly Val Thr Thr Leu Thr Gly
    290                 295                 300

Ile Phe Leu Leu Ser Met Tyr Met Val Phe Asp Ser Phe Thr Ala Asn
305                 310                 315                 320

Trp Gln Gly Ser Leu Phe Lys Ser Tyr Gly Met Thr Pro Leu Gln Met
            325                 330                 335
```

195

Met Cys Gly Val Asn Leu Phe Ser Ser Ile Phe Thr Gly Ala Ser Leu
        340   345   350

Ser Met Gln Gly Gly Phe Met Asp Ser Leu Ala Phe Ala Thr Glu His
        355   360   365

Pro Lys Phe Val Phe Asp Met Val Val Leu Ser Val Cys Ser Ala Val
        370   375   380

Gly Gln Leu Phe Ile Tyr His Thr Ile Asp Val Phe Gly Pro Val Val
385   390   395   400

Phe Thr Ile Ile Met Thr Leu Arg Gln Ala Val Ala Ile Met Leu Ser
                405   410   415

Cys Phe Ile Tyr Gln His Ser Ile Ser Leu Leu Gly Ile Phe Gly Val
            420   425   430

Leu Ile Val Phe Val Ala Ile Phe Leu Arg Val Tyr Cys Thr Gln Arg
        435   440   445

Leu Arg Ala Ile Arg Lys Arg Ala Glu Ala Asn Lys Pro Lys Met Ala
        450   455   460

Val
465

<210> 132
<211> 417
<212> PRT
<213> Caenorhabditis elegans

<400> 132
Met Asp Arg Ser Ile Met Pro Ile Asp Ser Pro Ala Arg Asp Lys Pro
  1   5   10   15

Pro Asp Glu Leu Val Trp Pro Leu Arg Leu Phe Leu Ile Leu Leu Gly
            20   25   30

Tyr Ser Thr Val Ala Thr Pro Ala Ala Ile Leu Ile Tyr Tyr Val Arg
        35   40   45

Arg Asn Arg His Ala Phe Glu Thr Pro Tyr Leu Ser Ile Arg Leu Leu
        50   55   60

Leu Arg Ser Phe Ala Val Gly Asn Pro Glu Tyr Gln Leu Ile Pro Thr
    65   70   75   80

196

Gly Glu Lys Gln Ala Arg Lys Glu Asn Asp Ser Ile Pro Gln Thr Arg
                85   90   95

Ala Gln Cys Ile Asn Val Ile Ile Leu Leu Leu Phe Phe Phe Ser Gly
            100   105   110

Ile Gln Val Thr Leu Val Ala Met Gly Val Leu Gln Glu Arg Ile Ile
        115   120   125

Thr Arg Gly Tyr Arg Arg Ser Asp Gln Leu Glu Val Glu Asp Lys Phe
    130   135   140

Gly Glu Thr Gln Phe Leu Ile Phe Cys Asn Arg Ile Val Ala Leu Val
145   150   155   160

Leu Ser Leu Met Ile Leu Ala Lys Asp Trp Thr Lys Gln Pro Pro His
            165   170   175

Val Pro Pro Leu Tyr Val His Ser Tyr Thr Ser Phe Ser Asn Thr Ile
        180   185   190

Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Tyr Val Ser Phe Pro Thr
        195   200   205

Gln Thr Ile Cys Lys Ala Ser Lys Val Val Val Thr Met Leu Met Gly
    210   215   220

Arg Leu Val Arg Gly Gln Arg Tyr Ser Trp Phe Glu Tyr Gly Cys Gly
225   230   235   240

Cys Thr Ile Ala Phe Gly Ala Ser Leu Phe Leu Leu Ser Ser Ser Ser
            245   250   255

Lys Gly Ala Gly Ser Thr Ile Thr Tyr Thr Ser Phe Ser Gly Met Ile
            260   265   270

Leu Met Ala Gly Tyr Leu Leu Phe Asp Ala Phe Thr Leu Asn Trp Gln
            275   280   285

Lys Ala Leu Phe Asp Thr Lys Pro Lys Val Ser Lys Tyr Gln Met Met
            290   295   300

Phe Gly Val Asn Phe Phe Ser Ala Ile Leu Cys Ala Val Ser Leu Ile
305   310   315   320

Glu Gln Gly Thr Leu Trp Ser Ser Ile Lys Phe Gly Ala Glu His Val
            325   330   335

197

Asp Phe Ser Arg Asp Val Phe Leu Leu Ser Leu Ser Gly Ala Ile Gly
            340   345   350

Gln Ile Phe Ile Tyr Ser Thr Ile Glu Arg Phe Gly Pro Ile Val Phe
            355   360   365

Ala Val Ile Met Thr Ile Arg Gln Ile Phe Ile Arg Asn Thr Leu Ile
        370   375   380

Arg Ala Glu Asp His Arg Gly Val Glu Met Ala Pro Pro Pro Pro Pro
385   390   395   400

Glu Pro Phe Arg Leu Lys Phe Leu Ser Met Ile Ile Ala Val Ile His
                405   410   415

Ile

<210> 133
<211> 124
<212> PRT
<213> Mus musculus

<400> 133
Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Thr Leu Pro Ser
  1   5   10   15

Leu Gly Ala Gly Gly Glu Ser Pro Glu Ala Pro Pro Gln Ser Trp Thr
            20   25   30

Gln Leu Trp Leu Phe Arg Phe Leu Leu Asn Val Ala Gly Tyr Ala Ser
        35   40   45

Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Leu Arg Arg Lys Asn
        50   55   60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
 65   70   75   80

Val Phe Gly Asn Glu Pro Lys Ala Pro Asp Glu Val Leu Leu Ala Pro
                85   90   95

Arg Thr Glu Thr Ala Glu Ser Thr Pro Ser Trp Gln Val Leu Lys Leu
            100   105   110

Val Phe Cys Ala Ser Gly Leu Gln Thr Gln Phe Leu

                                198

115   120

<210> 134
<211> 286
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DUF6 domain
      sequence

<400> 134
Ser Ser Ala Lys Asn Ala Phe Lys Lys Cys Phe Lys Ser Ile Phe Ser
  1   5   10   15

Trp His Asn Glu Thr Val Asn Ile Trp Thr Tyr Lys Lys Glu Lys Phe
            20   25   30

Leu Glu Arg Leu Val Lys Leu Ser His Leu Leu Gly Phe Ile Leu Phe
          35   40   45

Phe Leu Leu Ile Leu Asp Phe Leu Phe Leu Leu Val Pro Ile Leu Ala
      50   55   60

Ser Val Thr Ser His Leu Tyr Ile Leu Gln Asp Arg Val Val Phe Gly
 65   70   75   80

Phe Phe Thr Asp Leu Cys Val His Asp Leu Ala Gly Trp Pro Phe Tyr
                85   90   95

Phe Leu Gly Ala Phe Leu Cys Leu Leu Leu Ser Ser Ile Tyr His Thr
            100   105   110

Phe Ser Cys His Ser Leu Glu Lys Val Ser Glu Phe Phe Leu Lys Leu
          115   120   125

Asp Tyr Leu Gly Ile Ser Leu Leu Ile Val Ala Ser Phe Ile Pro Ile
      130   135   140

Ile Tyr Tyr Ala Phe Tyr Cys His Pro Phe Phe Arg Thr Leu Tyr Ile
145   150   155   160

Ser Ile Ile Leu Val Leu Gly Leu Ile Ala Ile Tyr Val Ser Leu Ser
                165   170   175

Asp Lys Phe Ser Ser Pro Lys Phe Arg Lys Arg Arg Val Pro Leu Arg
            180   185   190

                              199

```
Ala Gly Phe Phe Val Leu Leu Gly Leu Ser Gly Val Ile Pro Leu Leu
        195                 200                 205

His Ala Leu Ile Leu Phe Gly Gly His Glu Asn Leu Lys Val Arg Ile
        210                 215                 220

Ala Leu Pro Trp Val Leu Leu Met Ala Leu Leu Tyr Ile Val Gly Ala
225                 230                 235                 240

Val Phe Tyr Gly Thr Arg Ile Pro Glu Arg Phe Phe Arg Cys Pro His
            245                 250                 255

Ala Gly Lys Phe Asp Ile Val Gly His Ser His Gln Leu Phe His Val
            260                 265                 270

Leu Val Val Leu Ala Ala Phe Cys His Tyr Arg Ala Val Leu
        275                 280                 285
```

<210> 135
<211> 551
<212> PRT
<213> Homo sapiens

<400> 135
```
Met Leu Pro Leu Leu Leu Leu Pro Leu Leu Trp Gly Gly Ser Leu Gln
  1                  5                 10                 15

Glu Lys Pro Val Tyr Glu Leu Gln Val Gln Lys Ser Val Thr Val Gln
            20                  25                  30

Glu Gly Leu Cys Val Leu Val Pro Cys Ser Phe Ser Tyr Pro Trp Arg
        35                  40                  45

Ser Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly
        50                  55                  60

Glu Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg
 65                  70                  75                  80

Arg Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val
            85                  90                  95

Gln Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp
            100                 105                 110

Thr Gly Ser Tyr Phe Phe Arg Val Glu Arg Gly Arg Asp Val Lys Tyr
```

200

Ser Tyr Gln Gln Asn Lys Leu Asn Leu Glu Val Thr Ala Leu Ile Glu
    130   135   140

Lys Pro Asp Ile His Phe Leu Glu Pro Leu Glu Ser Gly Arg Pro Thr
145   150   155   160

Arg Leu Ser Cys Ser Leu Pro Gly Ser Cys Glu Ala Gly Pro Pro Leu
            165   170   175

Thr Phe Ser Trp Thr Gly Asn Ala Leu Ser Pro Leu Asp Pro Glu Thr
            180   185   190

Thr Arg Ser Ser Glu Leu Thr Leu Thr Pro Arg Pro Glu Asp His Gly
            195   200   205

Thr Asn Leu Thr Cys Gln Met Lys Arg Gln Gly Ala Gln Val Thr Thr
    210   215   220

Glu Arg Thr Val Gln Leu Asn Val Ser Tyr Ala Pro Gln Thr Ile Thr
225   230   235   240

Ile Phe Arg Asn Gly Ile Ala Leu Glu Ile Leu Gln Asn Thr Ser Tyr
            245   250   255

Leu Pro Val Leu Glu Gly Gln Ala Leu Arg Leu Leu Cys Asp Ala Pro
            260   265   270

Ser Asn Pro Pro Ala His Leu Ser Trp Phe Gln Gly Ser Pro Ala Leu
    275   280   285

Asn Ala Thr Pro Ile Ser Asn Thr Gly Ile Leu Glu Leu Arg Arg Val
    290   295   300

Arg Ser Ala Glu Glu Gly Gly Phe Thr Cys Arg Ala Gln His Pro Leu
305   310   315   320

Gly Phe Leu Gln Ile Phe Leu Asn Leu Ser Val Tyr Ser Leu Pro Gln
            325   330   335

Leu Leu Gly Pro Ser Cys Ser Trp Glu Ala Glu Gly Leu His Cys Arg
            340   345   350

Cys Ser Phe Arg Ala Arg Pro Ala Pro Ser Leu Cys Trp Arg Leu Glu
            355   360   365

Glu Lys Pro Leu Glu Gly Asn Ser Ser Gln Gly Ser Phe Lys Val Asn

Ser Ser Ser Ala Gly Pro Trp Ala Asn Ser Ser Leu Ile Leu His Gly
385   390   395   400

Gly Leu Ser Ser Asp Leu Lys Val Ser Cys Lys Ala Trp Asn Ile Tyr
                405   410   415

Gly Ser Gln Ser Gly Ser Val Leu Leu Leu Gln Gly Arg Ser Asn Leu
                420   425   430

Gly Thr Gly Val Val Pro Ala Ala Leu Gly Gly Ala Gly Val Met Ala
            435   440   445

Leu Leu Cys Ile Cys Leu Cys Leu Ile Phe Phe Leu Ile Val Lys Ala
        450   455   460

Arg Arg Lys Gln Ala Ala Gly Arg Pro Glu Lys Met Asp Asp Glu Asp
465   470   475   480

Pro Ile Met Gly Thr Ile Thr Ser Gly Ser Arg Lys Lys Pro Trp Pro
            485   490   495

Asp Ser Pro Gly Asp Gln Ala Ser Pro Pro Gly Asp Ala Pro Pro Leu
            500   505   510

Glu Glu Gln Lys Glu Leu His Tyr Ala Ser Leu Ser Phe Ser Glu Met
            515   520   525

Lys Ser Arg Glu Pro Lys Asp Gln Glu Ala Pro Ser Thr Thr Glu Tyr
        530   535   540

Ser Glu Ile Lys Thr Ser Lys
545   550

<210> 136
<211> 551
<212> PRT
<213> Homo sapiens

<400> 136
Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Gly Gly Ser Leu Gln
  1   5   10   15

Glu Lys Pro Val Tyr Glu Leu Gln Val Gln Lys Ser Val Thr Val Gln
                20   25   30

202

```
Glu Gly Leu Cys Val Leu Val Pro Cys Ser Phe Ser Tyr Pro Trp Arg
        35                  40                  45

Ser Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly
        50                  55                  60

Glu Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg
65                  70                  75                  80

Arg Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val
                85                  90                  95

Gln Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp
            100                 105                 110

Thr Gly Ser Tyr Phe Phe Arg Val Glu Arg Gly Arg Asp Val Lys Tyr
        115                 120                 125

Ser Tyr Gln Gln Asn Lys Leu Asn Leu Glu Val Thr Ala Leu Ile Glu
        130                 135                 140

Lys Pro Asp Ile His Phe Leu Glu Pro Leu Glu Ser Gly Arg Pro Thr
145                 150                 155                 160

Arg Leu Ser Cys Ser Leu Pro Gly Ser Cys Glu Ala Gly Pro Pro Leu
            165                 170                 175

Thr Phe Ser Trp Thr Gly Asn Ala Leu Ser Pro Leu Asp Pro Glu Thr
            180                 185                 190

Thr Arg Ser Ser Glu Leu Thr Leu Thr Pro Arg Pro Glu Asp His Gly
        195                 200                 205

Thr Asn Leu Thr Cys Gln Met Lys Arg Gln Gly Ala Gln Val Thr Thr
        210                 215                 220

Glu Arg Thr Val Gln Leu Asn Val Ser Tyr Ala Pro Gln Thr Ile Thr
225                 230                 235                 240

Ile Phe Arg Asn Gly Ile Ala Leu Glu Ile Leu Gln Asn Thr Ser Tyr
            245                 250                 255

Leu Pro Val Leu Glu Gly Gln Ala Leu Arg Leu Leu Cys Asp Ala Pro
            260                 265                 270

Ser Asn Pro Pro Ala His Leu Ser Trp Phe Gln Gly Ser Pro Ala Leu
            275                 280                 285
```

Asn Ala Thr Pro Ile Ser Asn Thr Gly Ile Leu Glu Leu Arg Arg Val
    290   295   300

Arg Ser Ala Glu Lys Gly Gly Phe Thr Cys Arg Ala Gln His Pro Leu
305   310   315   320

Gly Phe Leu Gln Ile Phe Leu Asn Leu Ser Val Tyr Ser Leu Pro Gln
                325   330   335

Leu Leu Gly Pro Ser Cys Ser Trp Glu Ala Glu Gly Leu His Cys Arg
            340   345   350

Cys Ser Phe Arg Ala Trp Pro Ala Pro Ser Leu Cys Trp Arg Leu Glu
            355   360   365

Glu Lys Pro Leu Glu Gly Asn Ser Ser Gln Gly Ser Phe Lys Val Asn
    370   375   380

Ser Ser Ser Pro Gly Pro Trp Ala Asn Ser Ser Leu Ile Leu His Gly
385   390   395   400

Gly Leu Asn Ser Asp Leu Lys Val Ser Cys Lys Ala Trp Asn Ile Tyr
            405   410   415

Gly Ser Gln Ser Gly Ser Val Leu Leu Leu Gln Gly Arg Ser Asn Leu
            420   425   430

Gly Thr Gly Val Val Pro Ala Ala Leu Gly Gly Ala Gly Val Met Ala
            435   440   445

Leu Leu Cys Ile Cys Leu Cys Leu Ile Phe Phe Leu Ile Val Lys Ala
    450   455   460

Arg Arg Lys Gln Ala Ala Gly Arg Pro Glu Lys Met Asp Asp Glu Asp
465   470   475   480

Pro Ile Met Gly Thr Ile Thr Ser Gly Ser Arg Lys Lys Pro Trp Pro
            485   490   495

Asp Ser Pro Gly Asp Gln Ala Ser Pro Pro Gly Asp Ala Pro Pro Leu
            500   505   510

Glu Glu Gln Lys Glu Leu His Tyr Ala Ser Leu Ser Phe Ser Glu Met
            515   520   525

Lys Ser Arg Glu Pro Lys Asp Gln Glu Ala Pro Ser Thr Thr Glu Tyr
    530   535   540

204

Ser Glu Ile Lys Thr Ser Lys
545   550

<210> 137
<211> 442
<212> PRT
<213> Homo sapiens

<400> 137
Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala Gln
  1   5   10   15

Glu Arg Arg Phe Gln Leu Glu Gly Pro Glu Ser Leu Thr Val Gln Glu
                20   25   30

Gly Leu Cys Val Leu Val Pro Cys Arg Leu Pro Thr Thr Leu Pro Ala
          35   40   45

Ser Tyr Tyr Gly Tyr Gly Tyr Trp Phe Leu Glu Gly Ala Asp Val Pro
      50   55   60

Val Ala Thr Asn Asp Pro Asp Glu Glu Val Gln Glu Glu Thr Arg Gly
 65   70   75   80

Arg Phe His Leu Leu Trp Asp Pro Arg Arg Lys Asn Cys Ser Leu Ser
              85   90   95

Ile Arg Asp Ala Arg Arg Arg Asp Asn Ala Ala Tyr Phe Phe Arg Leu
          100   105   110

Lys Ser Lys Trp Met Lys Tyr Gly Tyr Thr Ser Ser Lys Leu Ser Val
          115   120   125

Arg Val Met Ala Leu Thr His Arg Pro Asn Ile Ser Ile Pro Gly Thr
          130   135   140

Leu Glu Ser Gly His Pro Ser Asn Leu Thr Cys Ser Val Pro Trp Val
145   150   155   160

Cys Glu Gln Gly Thr Pro Pro Ile Phe Ser Trp Met Ser Ala Ala Pro
                165   170   175

Thr Ser Leu Gly Pro Arg Thr Thr Gln Ser Ser Val Leu Thr Ile Thr
              180   185   190

Pro Arg Pro Gln Asp His Ser Thr Asn Leu Thr Cys Gln Val Thr Phe
          195   200   205

205

Pro Gly Ala Gly Val Thr Met Glu Arg Thr Ile Gln Leu Asn Val Ser
    210   215   220

Tyr Ala Pro Gln Lys Val Ala Ile Ser Ile Phe Gln Gly Asn Ser Ala
225   230   235   240

Ala Phe Lys Ile Leu Gln Asn Thr Ser Ser Leu Pro Val Leu Glu Gly
                245   250   255

Gln Ala Leu Arg Leu Leu Cys Asp Ala Asp Gly Asn Pro Pro Ala His
                260   265   270

Leu Ser Trp Phe Gln Gly Phe Pro Ala Leu Asn Ala Thr Pro Ile Ser
                275   280   285

Asn Thr Gly Val Leu Glu Leu Pro Gln Val Gly Ser Ala Glu Glu Gly
                290   295   300

Asp Phe Thr Cys Arg Ala Gln His Pro Leu Gly Ser Leu Gln Ile Ser
305   310   315   320

Leu Ser Leu Phe Val His Trp Lys Pro Glu Gly Arg Ala Gly Gly Val
                325   330   335

Leu Gly Ala Val Trp Gly Ala Ser Ile Thr Thr Leu Val Phe Leu Cys
                340   345   350

Val Cys Phe Ile Phe Arg Val Lys Thr Arg Arg Lys Lys Ala Ala Gln
                355   360   365

Pro Val Gln Asn Thr Asp Asp Val Asn Pro Val Met Val Ser Gly Ser
    370   375   380

Arg Gly His Gln His Gln Phe Gln Thr Gly Ile Val Ser Asp His Pro
385   390   395   400

Ala Glu Ala Gly Pro Ile Ser Glu Asp Glu Gln Glu Leu His Tyr Ala
                405   410   415

Val Leu His Phe His Lys Val Gln Pro Gln Glu Pro Lys Val Thr Asp
                420   425   430

Thr Glu Tyr Ser Glu Ile Lys Ile His Lys
                435   440

<210> 138

206

<211> 440
<212> PRT
<213> Homo sapiens

<400> 138
Met Leu Pro Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala Gln
  1   5   10   15

Glu Arg Arg Phe Gln Leu Glu Gly Pro Glu Ser Leu Thr Val Gln Glu
              20   25   30

Gly Leu Cys Val Leu Val Pro Cys Arg Leu Pro Thr Thr Leu Pro Ala
          35   40   45

Ser Tyr Tyr Gly Tyr Gly Tyr Trp Phe Leu Glu Gly Ala Asp Val Pro
      50   55   60

Val Ala Thr Asn Asp Pro Asp Glu Glu Val Gln Glu Glu Thr Arg Gly
 65   70   75   80

Arg Phe His Leu Leu Trp Asp Pro Arg Arg Lys Asn Cys Ser Leu Ser
              85   90   95

Ile Arg Asp Ala Arg Arg Arg Asp Asn Ala Ala Tyr Phe Phe Arg Leu
          100   105   110

Lys Ser Lys Trp Met Lys Tyr Gly Tyr Thr Ser Ser Lys Ile Tyr Val
          115   120   125

Arg Val Met Ala Leu Thr His Arg Pro Asn Ile Ser Ile Pro Gly Pro
      130   135   140

Gly Val Trp Pro Ser Ser Asn Leu Thr Cys Ser Val Pro Trp Val Cys
145   150   155   160

Glu Gln Gly Thr Pro Pro Ile Phe Ser Trp Met Ser Ala Ala Pro His
              165   170   175

Leu Leu Gly Pro Arg Thr Thr Gln Ser Ser Val Leu Thr Ile Thr Pro
          180   185   190

Ala Gln Asp His Ser Thr Asn Leu Thr Cys Gln Val Thr Phe Pro Gly
          195   200   205

Ala Gly Val Thr Met Glu Arg Thr Ile Gln Leu Asn Val Ser Tyr Ala
      210   215   220

Pro Gln Lys Val Ala Ile Ser Ile Phe Gln Gly Asn Ser Ala Ala Phe

207

Lys Ile Leu Gln Asn Thr Ser Ser Leu Pro Val Leu Glu Gly Gln Ala
                245   250   255

Leu Arg Leu Leu Cys Asp Ala Asp Gly Asn Pro Pro Ala His Leu Ser
                260   265   270

Trp Phe Gln Gly Phe Pro Ala Leu Asn Ala Thr Pro Ile Ser Asn Thr
                275   280   285

Gly Val Leu Glu Leu Pro Gln Val Gly Ser Ala Glu Glu Gly Asp Phe
    290   295   300

Thr Cys Arg Ala Gln His Pro Leu Gly Ser Leu Gln Ile Ser Leu Ser
305   310   315   320

Leu Phe Val His Trp Lys Pro Glu Gly Arg Ala Gly Gly Val Leu Gly
                325   330   335

Ala Val Trp Gly Ala Ser Ile Thr Thr Leu Val Phe Leu Cys Val Cys
                340   345   350

Phe Ile Phe Arg Val Lys Thr Arg Arg Lys Lys Ala Ala Gln Pro Val
                355   360   365

Gln Asn Thr Asp Asp Val Asn Pro Val Met Val Ser Gly Ser Arg Gly
    370   375   380

His Gln His Gln Phe Gln Thr Gly Ile Val Ser Asp His Pro Ala Glu
385   390   395   400

Ala Gly Pro Ile Ser Glu Asp Glu Gln Glu Leu His Tyr Ala Val Leu
                405   410   415

His Phe His Lys Val Gln Pro Gln Glu Pro Lys Val Thr Asp Thr Glu
                420   425   430

Tyr Ser Glu Ile Lys Ile His Lys
        435   440

<210> 139
<211> 463
<212> PRT
<213> Homo sapiens

<400> 139

Met Leu Leu Leu Leu Leu Pro Leu Leu Trp Gly Arg Glu Arg Ala Glu
 1   5   10   15

Gly Gln Thr Ser Lys Leu Leu Thr Met Gln Ser Ser Val Thr Val Gln
             20   25   30

Glu Gly Leu Cys Val His Val Pro Cys Ser Phe Ser Tyr Pro Ser His
         35   40   45

Gly Trp Ile Tyr Pro Gly Pro Val Val His Gly Tyr Trp Phe Arg Glu
     50   55   60

Gly Ala Asn Thr Asp Gln Asp Ala Pro Val Ala Thr Asn Asn Pro Ala
 65   70   75   80

Arg Ala Val Trp Glu Glu Thr Arg Asp Arg Phe His Leu Leu Gly Asp
             85   90   95

Pro His Thr Glu Asn Cys Thr Leu Ser Ile Arg Asp Ala Arg Arg Ser
         100   105   110

Asp Ala Gly Arg Tyr Phe Phe Arg Met Glu Lys Gly Ser Ile Lys Trp
         115   120   125

Asn Tyr Lys His His Arg Leu Ser Val Asn Val Thr Ala Leu Thr His
     130   135   140

Arg Pro Asn Ile Leu Ile Pro Gly Thr Leu Glu Ser Gly Cys Pro Gln
145   150   155   160

Asn Leu Thr Cys Ser Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro
             165   170   175

Met Ile Ser Trp Ile Gly Thr Ser Val Ser Pro Leu Asp Pro Ser Thr
             180   185   190

Thr Arg Ser Ser Val Leu Thr Leu Ile Pro Gln Pro Gln Asp His Gly
         195   200   205

Thr Ser Leu Thr Cys Gln Val Thr Phe Pro Gly Ala Ser Val Thr Thr
         210   215   220

Asn Lys Thr Val His Leu Asn Val Ser Tyr Pro Pro Gln Asn Leu Thr
225   230   235   240

Met Thr Val Phe Gln Gly Asp Gly Thr Val Ser Thr Val Leu Gly Asn
             245   250   255

209

```
Gly Ser Ser Leu Ser Leu Pro Glu Gly Gln Ser Leu Arg Leu Val Cys
        260                 265                 270

Ala Val Asp Ala Val Asp Ser Asn Pro Pro Ala Arg Leu Ser Leu Ser
        275                 280                 285

Trp Arg Gly Leu Thr Leu Cys Pro Ser Gln Pro Ser Asn Pro Gly Val
    290                 295                 300

Leu Glu Leu Pro Trp Val His Leu Arg Asp Glu Ala Glu Phe Thr Cys
305                 310                 315                 320

Arg Ala Gln Asn Pro Leu Gly Ser Gln Gln Val Tyr Leu Asn Val Ser
            325                 330                 335

Leu Gln Ser Lys Ala Thr Ser Gly Val Thr Gln Gly Val Val Gly Gly
        340                 345                 350

Ala Gly Ala Thr Ala Leu Val Phe Leu Ser Phe Cys Val Ile Phe Val
        355                 360                 365

Val Val Arg Ser Cys Arg Lys Lys Ser Ala Arg Pro Ala Ala Gly Val
    370                 375                 380

Gly Asp Thr Gly Ile Glu Asp Ala Asn Ala Val Arg Gly Ser Ala Ser
385                 390                 395                 400

Gln Gly Pro Leu Thr Glu Pro Trp Ala Glu Asp Ser Pro Pro Asp Gln
            405                 410                 415

Pro Pro Pro Ala Ser Ala Arg Ser Ser Val Gly Glu Gly Glu Leu Gln
            420                 425                 430

Tyr Ala Ser Leu Ser Phe Gln Met Val Lys Pro Trp Asp Ser Arg Gly
        435                 440                 445

Gln Glu Ala Thr Asp Thr Glu Tyr Ser Glu Ile Lys Ile His Arg
    450                 455                 460
```

<210> 140
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Immunoglobin
      domain sequence

210

<400> 140

Ser Val Ser Gly Phe Gly Pro Pro Pro Val Thr Trp Leu Arg Asn Gly
 1   5   10   15

Lys Leu Ser Leu Thr Ile Ser Val Thr Pro Glu Asp Ser Gly Gly Thr
            20   25   30

Tyr Thr

<210> 141
<211> 290
<212> PRT
<213> Homo sapiens

<400> 141

Ala His Thr Glu Tyr Pro Val Asn Thr Ile Ile Ile His Glu Asp Phe
 1   5   10   15

Asp Asn Asn Ser Met Ser Asn Asn Ile Ala Leu Leu Lys Thr Asp Thr
            20   25   30

Ala Met His Phe Gly Asn Leu Val Gln Ser Ile Cys Phe Leu Gly Arg
            35   40   45

Met Leu His Thr Pro Pro Val Leu Gln Asn Cys Trp Val Ser Gly Trp
        50   55   60

Asn Pro Thr Ser Ala Thr Gly Asn His Met Thr Met Ser Val Leu Arg
 65   70   75   80

Lys Ile Phe Val Lys Asp Leu Asp Met Cys Pro Leu Tyr Lys Leu Gln
                85   90   95

Lys Thr Glu Cys Gly Ser His Thr Lys Glu Glu Thr Lys Thr Ala Cys
                100   105   110

Leu Gly Asp Pro Gly Ser Pro Met Met Cys Gln Leu Gln Gln Phe Asp
          115   120   125

Leu Trp Val Leu Arg Gly Ile Leu Asn Phe Gly Gly Glu Thr Cys Pro
        130   135   140

Gly Leu Phe Leu Tyr Thr Lys Val Glu Asp Tyr Ser Lys Trp Ile Thr
145   150   155   160

211

Ser Lys Ala Glu Arg Ala Gly Pro Pro Leu Ser Ser Leu His His Trp
                165   170   175

Glu Lys Leu Ile Ser Phe Ser His His Gly Pro Asn Ala Ala Met Thr
                180   185   190

Gln Lys Thr Tyr Ser Asp Ser Glu Leu Gly His Val Gly Ser Tyr Leu
                195   200   205

Gln Gly Gln Arg Arg Thr Ile Thr His Ser Arg Leu Gly Asn Ser Ser
        210   215   220

Arg Asp Ser Leu Asp Val Arg Glu Lys Asp Val Lys Glu Ser Gly Arg
225   230   235   240

Ser Pro Glu Ala Ser Val Gln Pro Leu Tyr Tyr Asp Tyr Tyr Gly Gly
                245   250   255

Glu Val Gly Glu Gly Arg Ile Phe Ala Gly Gln Asn Arg Leu Tyr Gln
                260   265   270

Pro Glu Glu Ile Ile Leu Val Ser Phe Val Leu Val Phe Phe Cys Ser
                275   280   285

Ser Ile
    290

<210> 142
<211> 270
<212> PRT
<213> Homo sapiens

<400> 142
Met Ser Asn Asn Ile Ala Leu Leu Lys Thr Asp Thr Ala Met His Phe
  1   5   10   15

Gly Asn Leu Val Gln Ser Ile Cys Phe Leu Gly Arg Met Leu His Thr
                 20   25   30

Pro Pro Val Leu Gln Asn Cys Trp Val Ser Gly Trp Asn Pro Thr Ser
         35   40   45

Ala Thr Gly Asn His Met Thr Met Ser Val Leu Arg Lys Ile Phe Val
        50   55   60

Lys Asp Leu Asp Met Cys Pro Leu Tyr Lys Leu Gln Lys Thr Glu Cys
  65   70   75   80

212

Gly Ser His Thr Lys Glu Glu Thr Lys Thr Ala Cys Leu Gly Asp Pro
            85   90   95

Gly Ser Pro Met Met Cys Gln Leu Gln Gln Phe Asp Leu Trp Val Leu
            100   105   110

Arg Gly Val Leu Asn Phe Gly Gly Glu Thr Cys Pro Gly Leu Phe Leu
            115   120   125

Tyr Thr Lys Val Glu Asp Tyr Ser Lys Trp Ile Thr Ser Lys Ala Glu
            130   135   140

Arg Ala Gly Pro Pro Leu Ser Ser Leu His His Trp Glu Lys Leu Ile
145   150   155   160

Ser Phe Ser His His Gly Pro Asn Ala Thr Met Thr Gln Lys Thr Tyr
            165   170   175

Ser Asp Ser Glu Leu Gly His Val Gly Ser Tyr Leu Gln Gly Gln Arg
            180   185   190

Arg Thr Ile Thr His Ser Arg Leu Gly Asn Ser Ser Arg Asp Ser Leu
            195   200   205

Asp Val Arg Glu Lys Asp Val Lys Glu Ser Gly Arg Ser Pro Glu Ala
            210   215   220

Ser Val Gln Pro Leu Tyr Tyr Asp Tyr Tyr Gly Gly Glu Val Gly Glu
225   230   235   240

Gly Arg Ile Phe Ala Gly Gln Asn Arg Leu Tyr Gln Pro Glu Glu Ile
            245   250   255

Ile Leu Val Ser Phe Val Leu Val Phe Phe Cys Ser Ser Ile
            260   265   270

<210> 143
<211> 624
<212> PRT
<213> Mus musculus

<400> 143
Met Thr Ser Leu His Gln Val Leu Tyr Phe Ile Phe Phe Ala Ser Val
   1   5   10   15

Ser Ser Glu Cys Val Thr Lys Val Phe Lys Asp Ile Ser Phe Gln Gly

213

```
                20                        25                        30

Gly Asp Leu Ser Thr Val Phe Thr Pro Ser Ala Thr Tyr Cys Arg Leu
        35                    40                    45

Val Cys Thr His His Pro Arg Cys Leu Leu Phe Thr Phe Met Ala Glu
        50                    55                    60

Ser Ser Ser Asp Asp Pro Thr Lys Trp Phe Ala Cys Ile Leu Lys Asp
65                    70                    75                    80

Ser Val Thr Glu Ile Leu Pro Met Val Asn Met Thr Gly Ala Ile Ser
                85                    90                    95

Gly Tyr Ser Phe Lys Gln Cys Pro Gln Gln Leu Ser Thr Cys Ser Lys
            100                   105                   110

Asp Val Tyr Val Asn Leu Asp Met Lys Gly Met Asn Tyr Asn Ser Ser
            115                   120                   125

Val Val Lys Asn Ala Arg Glu Cys Gln Glu Arg Cys Thr Asp Asp Ala
        130                   135                   140

His Cys Gln Phe Phe Thr Tyr Ala Thr Gly Tyr Phe Pro Ser Val Asp
145                   150                   155                   160

His Arg Lys Met Cys Leu Leu Lys Tyr Thr Arg Thr Gly Thr Pro Thr
            165                   170                   175

Thr Ile Thr Lys Leu Asn Gly Val Val Ser Gly Phe Ser Leu Lys Ser
            180                   185                   190

Cys Gly Leu Ser Asn Leu Ala Cys Ile Arg Asp Ile Phe Pro Asn Thr
            195                   200                   205

Val Leu Ala Asp Leu Asn Ile Asp Ser Val Val Ala Pro Asp Ala Phe
        210                   215                   220

Val Cys Arg Arg Ile Cys Thr His His Pro Thr Cys Leu Phe Phe Thr
225                   230                   235                   240

Phe Phe Ser Gln Ala Trp Pro Lys Glu Ser Gln Arg His Leu Cys Leu
                245                   250                   255

Leu Lys Thr Ser Glu Ser Gly Leu Pro Ser Thr Arg Ile Thr Lys Ser
            260                   265                   270

His Ala Leu Ser Gly Phe Ser Leu Gln His Cys Arg His Ser Val Pro

                              214
```

Val Phe Cys His Pro Ser Phe Tyr Asn Asp Thr Asp Phe Leu Gly Glu
    290   295   300

Glu Leu Asp Ile Val Asp Val Lys Gly Gln Glu Thr Cys Gln Lys Thr
305   310   315   320

Cys Thr Asn Asn Ala Arg Cys Gln Phe Phe Thr Tyr Tyr Pro Ser His
            325   330   335

Arg Leu Cys Asn Glu Arg Asn Arg Arg Gly Arg Cys Tyr Leu Lys Leu
            340   345   350

Ser Ser Asn Gly Ser Pro Thr Arg Ile Leu His Gly Arg Gly Gly Ile
            355   360   365

Ser Gly Tyr Ser Leu Arg Leu Cys Lys Met Asp Asn Val Cys Thr Thr
    370   375   380

Lys Ile Asn Pro Arg Val Val Gly Gly Ala Ala Ser Val His Gly Glu
385   390   395   400

Trp Pro Trp Gln Val Thr Leu His Ile Ser Gln Gly His Leu Cys Gly
            405   410   415

Gly Ser Ile Ile Gly Asn Gln Trp Ile Leu Thr Ala Ala His Cys Phe
            420   425   430

Ser Gly Ile Glu Thr Pro Lys Lys Leu Arg Val Tyr Gly Gly Ile Val
            435   440   445

Asn Gln Ser Glu Ile Asn Glu Gly Thr Ala Phe Phe Arg Val Gln Glu
    450   455   460

Met Ile Ile His Asp Gln Tyr Thr Thr Ala Glu Ser Gly Tyr Asp Ile
465   470   475   480

Ala Leu Leu Lys Leu Glu Ser Ala Met Asn Tyr Thr Asp Phe Gln Arg
            485   490   495

Pro Ile Cys Leu Pro Ser Lys Gly Asp Arg Asn Ala Val His Thr Glu
            500   505   510

Cys Trp Val Thr Gly Trp Gly Tyr Thr Ala Leu Arg Gly Glu Val Gln
            515   520   525

Ser Thr Leu Gln Lys Ala Lys Val Pro Leu Val Ser Asn Glu Glu Cys

```
                530                      535                      540

     Gln Thr Arg Tyr Arg Arg His Lys Ile Thr Asn Lys Met Ile Cys Ala
     545                 550                 555                 560

     Gly Tyr Lys Glu Gly Gly Lys Asp Thr Cys Lys Gly Asp Ser Gly Gly
                     565                 570                 575

     Pro Leu Ser Cys Lys Tyr Asn Gly Val Trp His Leu Val Gly Ile Thr
                     580                 585                 590

     Ser Trp Gly Glu Gly Cys Gly Gln Lys Glu Arg Pro Gly Val Tyr Thr
                 595                 600                 605

     Asn Val Ala Lys Tyr Val Asp Trp Ile Leu Glu Lys Thr Gln Thr Val
         610                 615                 620
```

<210> 144
<211> 326
<212> PRT
<213> Mus musculus

<400> 144
```
     Met Cys Arg Gln Pro Met Lys Arg Trp Lys Asp Arg Arg Thr Gly Leu
       1               5                  10                  15

     Leu Leu Pro Leu Val Leu Leu Leu Phe Gly Ala Cys Ser Ser Leu Ala
                     20                  25                  30

     Trp Val Cys Gly Arg Arg Met Ser Ser Arg Ser Gln Gln Leu Asn Asn
                 35                  40                  45

     Ala Ser Ala Ile Val Glu Gly Lys Pro Ala Ser Ala Ile Val Gly Gly
         50                  55                  60

     Lys Pro Ala Asn Ile Leu Glu Phe Pro Trp His Val Gly Ile Met Asn
     65                  70                  75                  80

     His Gly Ser His Leu Cys Gly Gly Ser Ile Leu Asn Glu Trp Trp Val
                     85                  90                  95

     Leu Ser Ala Ser His Cys Phe Asp Gln Leu Asn Asn Ser Lys Leu Glu
                     100                 105                 110
```

Ile Ile His Gly Thr Glu Asp Leu Ser Thr Lys Gly Ile Lys Tyr Gln
        115   120   125

Lys Val Asp Lys Leu Phe Leu His Pro Lys Phe Asp Asp Trp Leu Leu
        130   135   140

Asp Asn Asp Ile Ala Leu Leu Leu Leu Lys Ser Pro Leu Asn Leu Ser
145   150   155   160

Val Asn Arg Ile Pro Ile Cys Thr Ser Glu Ile Ser Asp Ile Gln Ala
                165   170   175

Trp Arg Asn Cys Trp Val Thr Gly Trp Gly Ile Thr Asn Thr Ser Glu
                180   185   190

Lys Gly Val Gln Pro Thr Ile Leu Gln Ala Val Lys Val Asp Leu Tyr
        195   200   205

Arg Trp Asp Trp Cys Gly Tyr Ile Leu Ser Leu Leu Thr Lys Asn Met
        210   215   220

Leu Cys Ala Gly Thr Gln Asp Pro Gly Lys Asp Ala Cys Gln Gly Asp
225   230   235   240

Ser Gly Gly Ala Leu Val Cys Asn Lys Lys Arg Asn Thr Ala Ile Trp
                245   250   255

Tyr Gln Val Gly Ile Val Ser Trp Gly Met Gly Cys Gly Lys Lys Asn
                260   265   270

Leu Pro Gly Val Tyr Thr Lys Val Ser His Tyr Val Arg Trp Ile Ser
        275   280   285

Lys Gln Thr Ala Lys Ala Gly Arg Pro Tyr Met Tyr Glu Gln Asn Ser
        290   295   300

Ala Cys Pro Leu Val Leu Ser Cys Arg Ala Ile Leu Phe Leu Tyr Phe
305   310   315   320

Val Met Phe Leu Leu Thr
                325

<210> 145
<211> 624
<212> PRT
<213> Mus musculus

217

<400> 145

```
Met Thr Ser Leu His Gln Val Leu Tyr Phe Ile Phe Phe Ala Ser Val
 1            5                  10               15

Ser Ser Glu Cys Val Thr Lys Val Phe Lys Asp Ile Ser Phe Gln Gly
           20               25               30

Gly Asp Leu Ser Thr Val Phe Thr Pro Ser Ala Thr Tyr Cys Arg Leu
       35               40               45

Val Cys Thr His His Pro Arg Cys Leu Leu Phe Thr Phe Met Ala Glu
     50               55               60

Ser Ser Ser Asp Asp Pro Thr Lys Trp Phe Ala Cys Ile Leu Lys Asp
65               70               75               80

Ser Val Thr Glu Ile Leu Pro Met Val Asn Met Thr Gly Ala Ile Ser
              85               90               95

Gly Tyr Ser Phe Lys Gln Cys Pro Gln Gln Leu Ser Thr Cys Ser Lys
           100              105              110

Asp Glu Tyr Val Asn Leu Asp Met Lys Gly Met Asn Tyr Asn Ser Ser
       115              120              125

Val Val Lys Asn Ala Arg Glu Cys Gln Glu Arg Cys Thr Asp Asp Ala
   130              135              140

His Cys Gln Phe Phe Thr Tyr Ala Thr Gly Tyr Phe Pro Ser Val Asp
145              150              155              160

His Arg Lys Met Cys Leu Leu Lys Tyr Thr Arg Thr Gly Thr Pro Thr
           165              170              175

Thr Ile Thr Lys Leu Asn Gly Val Val Ser Gly Phe Ser Leu Lys Ser
           180              185              190

Cys Gly Leu Ser Asn Leu Ala Cys Ile Arg Asp Ile Phe Pro Asn Thr
       195              200              205

Val Leu Ala Asp Leu Asn Ile Asp Ser Val Val Ala Pro Asp Ala Phe
   210              215              220

Val Cys Arg Arg Ile Cys Thr His His Pro Thr Cys Leu Phe Phe Thr
225              230              235              240

Phe Phe Ser Gln Ala Trp Pro Lys Glu Ser Gln Arg His Leu Cys Leu
           245              250              255
```

218

```
Leu Lys Thr Ser Glu Ser Gly Leu Pro Ser Thr Arg Ile Thr Lys Ile
        260                 265                 270

His Ala Leu Ser Gly Phe Ser Leu Gln His Cys Arg His Ser Val Pro
        275                 280                 285

Val Phe Cys His Pro Ser Phe Tyr Asn Asp Thr Asp Phe Leu Gly Glu
        290                 295                 300

Glu Leu Asp Ile Val Asp Val Lys Gly Gln Glu Thr Cys Gln Lys Thr
305                 310                 315                 320

Cys Thr Asn Asn Ala Arg Cys Gln Phe Phe Thr Tyr Tyr Pro Ser His
                325                 330                 335

Arg Leu Cys Asn Glu Arg Asn Arg Arg Gly Arg Cys Tyr Leu Lys Leu
                340                 345                 350

Ser Ser Asn Gly Ser Pro Thr Arg Ile Leu His Gly Arg Gly Gly Leu
                355                 360                 365

Ser Gly Tyr Ser Leu Arg Leu Cys Lys Met Asp Asn Val Cys Thr Thr
        370                 375                 380

Lys Ile Asn Pro Arg Val Val Gly Gly Ala Ala Ser Val His Gly Glu
385                 390                 395                 400

Trp Pro Trp Gln Val Thr Leu His Ile Ser Gln Gly His Leu Cys Gly
                405                 410                 415

Gly Ser Ile Ile Gly Asn Gln Trp Ile Leu Thr Ala Ala His Cys Phe
                420                 425                 430

Ser Gly Ile Glu Thr Pro Lys Lys Leu Arg Val Tyr Gly Gly Ile Val
        435                 440                 445

Asn Gln Ser Glu Ile Asn Glu Gly Thr Ala Phe Phe Arg Glu Gln Glu
        450                 455                 460

Met Ile Ile His Asp Gln Tyr Thr Thr Ala Glu Ser Gly Tyr Asp Ile
465                 470                 475                 480

Ala Leu Leu Lys Leu Glu Ser Ala Met Asn Tyr Thr Asp Phe Gln Arg
                485                 490                 495

Pro Ile Cys Leu Pro Ser Lys Gly Asp Arg Asn Ala Val His Thr Glu
        500                 505                 510
```

219

```
Cys Trp Val Thr Gly Trp Gly Tyr Thr Ala Leu Arg Gly Glu Val Gln
        515             520             525

Ser Thr Leu Gln Lys Ala Lys Val Pro Leu Val Ser Asn Glu Glu Cys
        530             535             540

Gln Thr Arg Tyr Arg Arg His Lys Ile Thr Asn Lys Met Ile Cys Ala
545             550             555             560

Gly Tyr Lys Glu Gly Gly Lys Asp Thr Cys Lys Gly Asp Ser Gly Gly
            565             570             575

Pro Leu Ser Cys Lys Tyr Asn Gly Val Trp His Leu Val Gly Ile Thr
        580             585             590

Ser Trp Gly Glu Gly Cys Gly Gln Lys Glu Arg Pro Gly Val Tyr Thr
        595             600             605

Asn Val Ala Lys Tyr Val Asp Trp Ile Leu Glu Lys Thr Gln Thr Val
    610             615             620



<210> 146
<211> 213
<212> PRT
<213> Homo sapiens

<400> 146
Glu Phe Pro Trp Val Val Ser Leu Gln Asp Ser Gln Tyr Thr His Leu
  1             5               10              15

Ala Phe Gly Cys Ile Leu Ser Glu Phe Trp Val Leu Ser Ile Ala Ser
            20              25              30

Ala Ile Gln Asn Arg Lys Asp Ile Val Val Ile Val Gly Ile Ser Asn
        35              40              45

Met Asp Pro Ser Lys Ile Ala His Thr Glu Tyr Pro Val Asn Thr Ile
        50              55              60

Ile Ile His Glu Asp Phe Asp Asn Asn Ser Met Ser Asn Asn Ile Ala
65              70              75              80

Leu Leu Lys Thr Asp Thr Ala Met His Phe Gly Asn Leu Val Gln Ser
```

85   90   95

Ile Cys Phe Leu Gly Arg Met Leu His Thr Pro Pro Val Leu Gln Asn
            100   105   110

Cys Trp Val Ser Gly Trp Asn Pro Thr Ser Ala Thr Gly Asn His Met
            115   120   125

Thr Met Ser Val Leu Arg Lys Ile Phe Val Lys Asp Leu Asp Met Cys
            130   135   140

Pro Leu Tyr Lys Leu Gln Lys Thr Glu Cys Gly Ser His Thr Lys Glu
145   150   155   160

Glu Thr Lys Thr Ala Cys Leu Gly Asp Pro Gly Ser Pro Met Met Cys
                165   170   175

Gln Leu Gln Gln Phe Asp Leu Trp Val Leu Arg Gly Ile Leu Asn Phe
            180   185   190

Gly Gly Glu Thr Cys Pro Gly Leu Phe Leu Tyr Thr Lys Val Glu Asp
            195   200   205

Tyr Ser Lys Trp Ile
        210

<210> 147
<211> 207
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Trypsin domain
        sequence

<400> 147
Ser Phe Pro Trp Gln Val Ser Leu Gln Val Ser Ser Gly His Phe Cys
   1   5   10   15

Gly Gly Ser Leu Ile Ser Glu Asn Trp Val Leu Thr Ala Ala His Cys
                20   25   30

Val Ser Gly Ala Ser Ser Val Arg Val Val Leu Gly Glu His Asn Leu
            35   40   45

Gly Thr Thr Glu Gly Thr Glu Gln Lys Phe Asp Val Lys Lys Ile Ile
        50   55   60

                                    221

```
Val His Pro Asn Tyr Asn Pro Asp Thr Asn Asp Ile Ala Leu Leu Lys
 65                 70              75                      80

Leu Lys Ser Pro Val Thr Leu Gly Asp Thr Val Arg Pro Ile Cys Leu
            85              90                  95

Pro Ser Ala Ser Ser Asp Leu Pro Val Gly Thr Thr Cys Ser Val Ser
            100             105             110

Gly Trp Gly Arg Thr Lys Asn Leu Gly Thr Ser Asp Thr Leu Gln Glu
        115             120             125

Val Val Val Pro Ile Val Ser Arg Glu Thr Cys Arg Ser Ala Tyr Gly
    130             135             140

Gly Thr Val Thr Asp Thr Met Ile Cys Ala Gly Ala Leu Gly Gly Lys
145             150             155                     160

Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Asp Gly
            165             170             175

Glu Leu Val Gly Ile Val Ser Trp Gly Tyr Gly Cys Ala Val Gly Asn
            180             185             190

Tyr Pro Gly Val Tyr Thr Arg Val Ser Arg Tyr Leu Asp Trp Ile
        195             200             205


<210> 148
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 148
gatccttgga aacaaccaga tc                                          22


<210> 149
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
```

<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 149
cttcctgtcc accgtggagg acct   24

<210> 150
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 150
ctccaggttg ttgtaggaca ga   22

<210> 151
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 151
tttgcagtgc aacacagata tc   22

<210> 152
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 152
ttacggtcta cacaaaagct ttccca   26

<210> 153
<211> 21

```
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  PCR Primer
      sequence

<400> 153
gcttcctgaa ggttttgttg a                                            21


<210> 154
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  PCR Primer
      sequence

<400> 154
ggtttgtgct gcttctaaca tc                                           22


<210> 155
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  PCR Primer
      sequence

<400> 155
acaccagcgg tgctcctctt caat                                         24


<210> 156
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  PCR Primer
      sequence

<400> 156
cattgagcat cttacggttt gt                                           22
```

224

```
<210> 157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 157
ctgggcatcc agaagatctt                                                20


<210> 158
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 158
ctctgcaagt acagcggcta cctgg                                          25


<210> 159
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 159
cctcgtcatt cagttccagt ac                                             22


<210> 160
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
```

sequence

<400> 160
ggtgccaata cgaagctctt a   21

<210> 161
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 161
agttcgtcag cttccccacc cag   23

<210> 162
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 162
catgacaggg atcaccttag ag   22

<210> 163
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 163
gagaactgtc cagctcaatg tc   22

<210> 164
<211> 26
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 164
ctccacagac catcaccatc ttcagg   26

<210> 165
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 165
tatgaggtgt tttgcaggat ct   22

<210> 166
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 166
agcaagattg ctcacacaga gt   22

<210> 167
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 167
ccagtcaata ccatcatcat ccatgagg   28

<210> 168
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 168
tatgttgttg ctcatggagt tg   22

<210> 169
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 169
tggcttattc agaagagcat aaagg   25

<210> 170
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 170
agtgactaga gatcctccag gtcagtt   27

<210> 171
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 171
tggcttattc agaagagcat aaagg   25

<210> 172
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 172
agtgactaga gatcctccag gtcagtt   27

<210> 173
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 173
cgcgtgacct tgcccctctt g   21

<210> 174
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 174
cgtcatcctg agcccgtccg tc   22

<210> 175
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 175
gtttcgggcc ctgtgcgg   18

<210> 176
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 176
gtggtgccca tttgttttcc tcagagt   27

<210> 177
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 177
ggtcatggaa gaacgggaag aggt   24

<210> 178
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 178
ctggggaggg tcaaagaagg agct   24

```
<210> 179
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 179
ctcccactcc tgctgcttct gact                                          24


<210> 180
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 180
aaggctgggc ctaacccagt ctcat                                         25


<210> 181
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence

<400> 181
gtccctgcag gagaagccag tgtac                                         25


<210> 182
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:   PCR Primer
      sequence
```

<400> 182
ctgggcaaat cctcacttgc ttgtct   26

<210> 183
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 183
cctctttacc acacagaacc aagcact   27

<210> 184
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
      sequence

<400> 184
agccccagtg tgcaactatc aaaaac   26

<210> 185
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SAGE library
      tag sequence

<400> 185
agcctgttgc   10

<210> 186
<211> 79
<212> PRT
<213> Homo sapiens

<400> 186
Cys Tyr His Gly Asn Gly Glu Asn Tyr Arg Gly Thr Ala Ser Thr Thr
  1   5   10   15

Glu Ser Gly Ala Pro Cys Gln Arg Trp Asp Ser Gln Thr Pro His Arg
              20   25   30

His Ser Lys Tyr Thr Pro Glu Arg Tyr Pro Ala Lys Gly Leu Gly Glu
          35   40   45

Asn Tyr Cys Arg Asn Pro Asp Gly Asp Glu Arg Pro Trp Cys Tyr Thr
      50   55   60

Thr Asp Pro Arg Val Arg Trp Glu Tyr Cys Asp Ile Pro Arg Cys
  65   70   75

<210> 187
<211> 81
<212> PRT
<213> Homo sapiens

<400> 187
Cys Tyr Ala Gly Asn Gly Glu Ser Tyr Arg Gly Thr Ala Ser Thr Thr
  1   5   10   15

Lys Ser Gly Lys Pro Cys Gln Arg Trp Asp Ser Gln Thr Pro His Leu
              20   25   30

His Arg Phe Thr Pro Glu Arg Phe Pro Glu Leu Gly Leu Glu His Asn
          35   40   45

Tyr Cys Arg Asn Pro Asp Gly Asp Ser Glu Gly Pro Trp Cys Tyr Thr
      50   55   60

Thr Asp Pro Asn Val Arg Trp Glu Tyr Cys Asp Ile Pro Gln Cys Glu
  65   70   75   80

Ser

<210> 188
<211> 81
<212> PRT
<213> Homo sapiens

<400> 188

233

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Arg Asp Cys Tyr Ala Gly Asn Gly Glu Ser Tyr Arg Gly Thr Ala Ser
  1               5                  10                  15

Thr Thr Lys Ser Gly Lys Pro Cys Gln Arg Trp Asp Ser Gln Thr Pro
                20                  25                  30

His Leu His Arg Phe Thr Pro Glu Arg Phe Pro Glu Leu Gly Leu Glu
            35                  40                  45

His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Ser Glu Gly Pro Trp Cys
        50                  55                  60

Tyr Thr Thr Asp Pro Asn Val Arg Trp Glu Tyr Cys Asp Ile Pro Gln
 65                  70                  75                  80

Cys
```

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<210> 189
<211> 75
<212> PRT
<213> Homo sapiens

<400> 189
Cys Phe Val Arg Leu Pro Asn Thr Lys Leu Pro Asp Phe Ser Pro Ile
  1               5                  10                  15

Val Ile Ser Val Ala Ser Leu Glu Glu Cys Ala Gln Lys Cys Leu Asn
                20                  25                  30

Ser Asn Cys Ser Cys Arg Ser Phe Thr Tyr Asn Asn Asp Thr Lys Gly
            35                  40                  45

Cys Leu Leu Trp Ser Glu Ser Ser Leu Gly Asp Ala Arg Gln Leu Leu
        50                  55                  60

Pro Ser Gly Gly Val Asp Tyr Tyr Glu Lys Ile
 65                  70                  75
```

```
<210> 190
<211> 181
<212> PRT
<213> Homo sapiens

<400> 190
Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr Leu
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234

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          1                    5                        10                        15

     Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser Ser
                     20                    25                    30

     Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu Ile
                 35                    40                    45

     Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp Gln
             50                    55                    60

     Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe Gly
     65                    70                    75                    80

     Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu Gln
                     85                    90                    95

     Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu Phe
                 100                   105                   110

     Ala Ala His Ala Leu Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln Leu
                 115                   120                   125

     Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr Ile
                 130                   135                   140

     Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu Leu
     145                   150                   155                   160

     Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val Val
                     165                   170                   175

     Phe Ala Ala Leu Leu
                 180


     <210> 191
     <211> 68
     <212> PRT
     <213> Homo sapiens

     <400> 191
     Trp Tyr Ser Ser Pro Pro Leu Tyr Val Tyr Trp Phe Arg Asp Gly Glu
         1                    5                        10                    15

     Ile Pro Tyr Tyr Ala Glu Val Val Ala Thr Asn Asn Pro Asp Arg Arg
                 20                    25                    30
```

```
Val Lys Pro Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Val Gln
        35                  40                  45

Lys Lys Asn Cys Ser Leu Ser Ile Gly Asp Ala Arg Met Glu Asp Thr
        50                  55                  60

Gly Ser Tyr Phe
  65
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